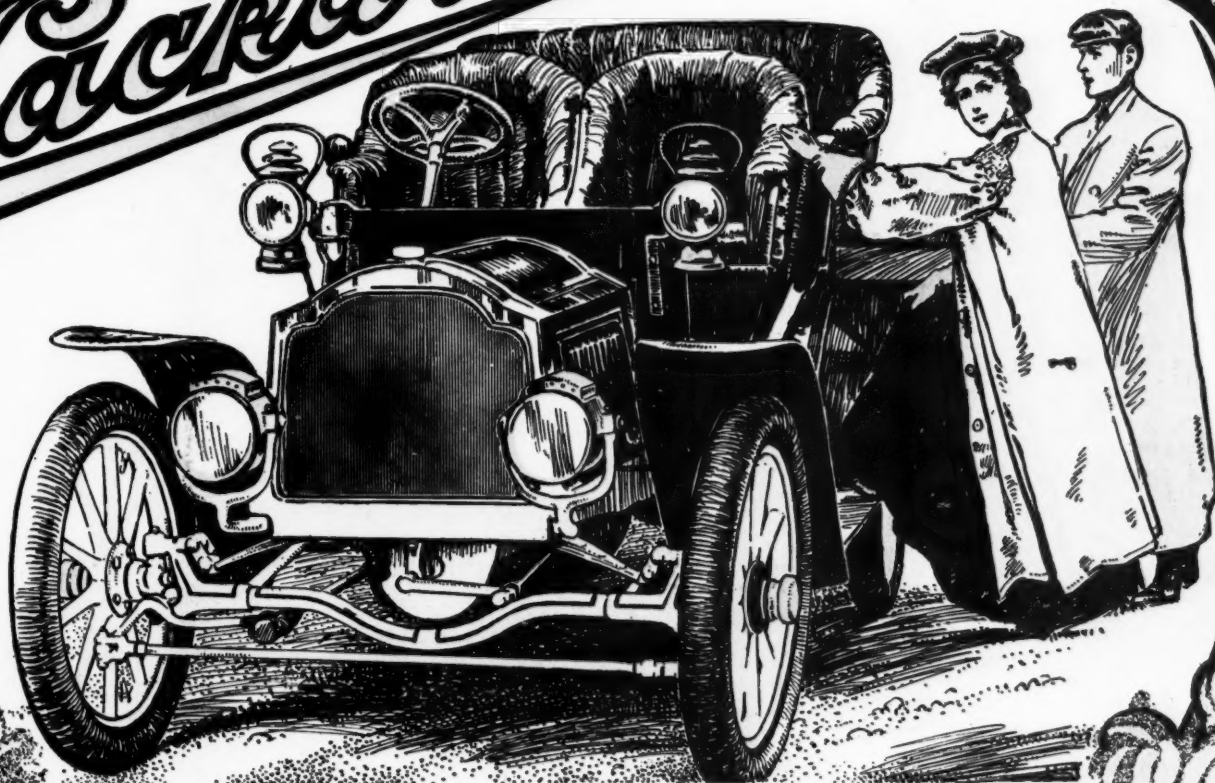


MOTOR AGE

Vol. VII
No. 21

CHICAGO, MAY 25, 1905

Ten Cents
Per Copy



"A leading engineering firm in this city was retained last week by a wealthy prospective purchaser of an automobile to thoroughly examine in detail every high-grade make of automobile on the local market, and report on them to him, his choice of a machine to be contingent on the report. The firm spent several days making an exhaustive investigation, and finally reported in favor of the 'Packard,' 1905 model, as being the most mechanically perfect automobile this season. They state that their report was entirely unbiased, as their client instructed them that he wished to buy the best machine to be had, regardless of cost."—*The Censor*, St. Louis, Mo., April 6, 1905.

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ARE GOOD TIRES

CLINCHER OR PERFECTED DUNLOP

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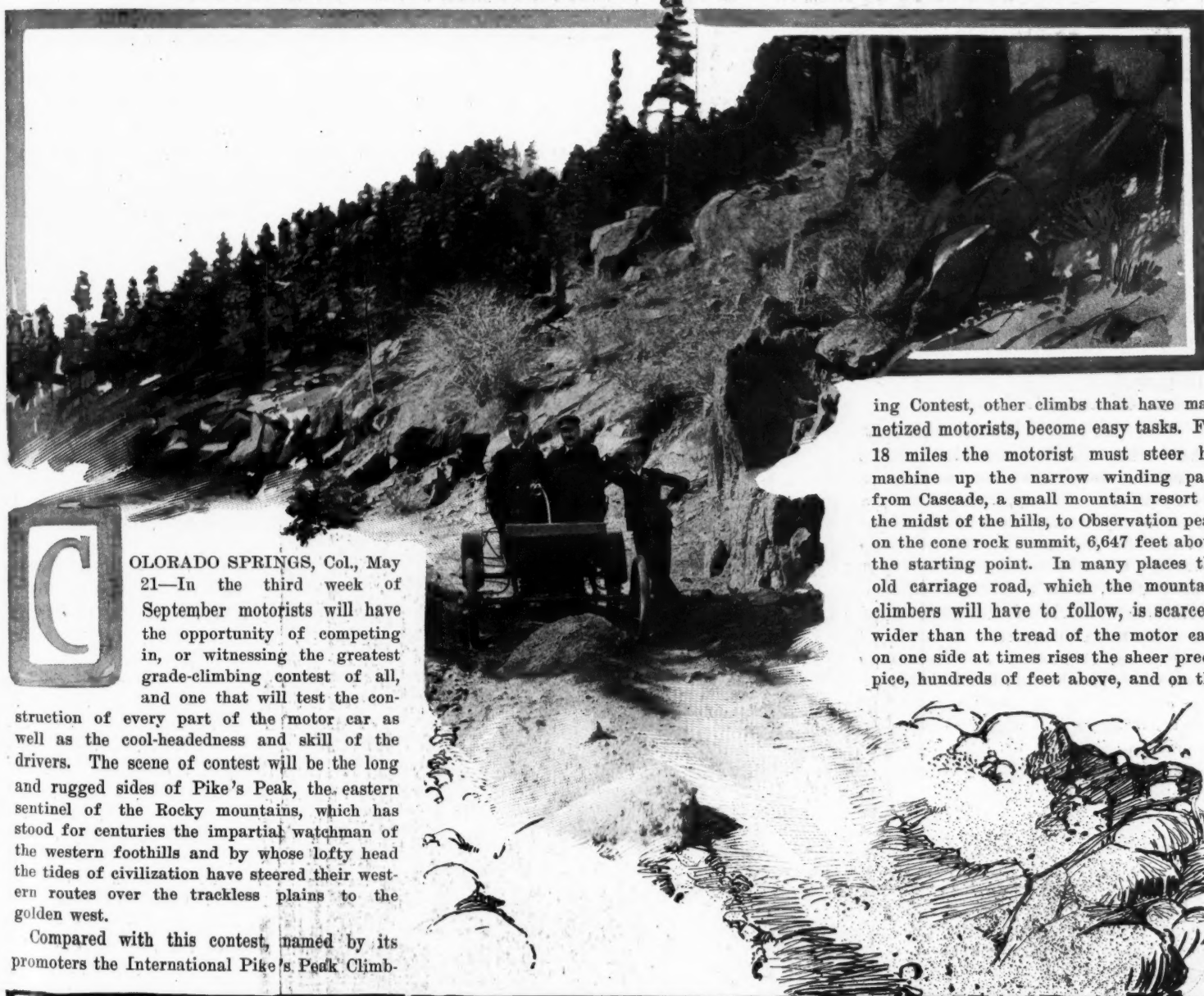
MOTOR AGE

VOL. VII. No. 21

CHICAGO, MAY 25, 1905

\$2.00 Per Year

A RUGGED STAIRWAY TO CLOUDLAND

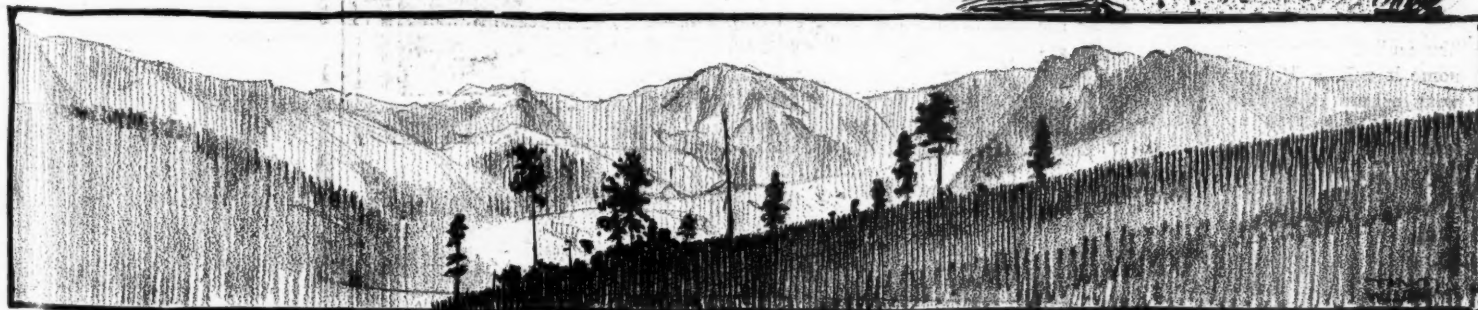


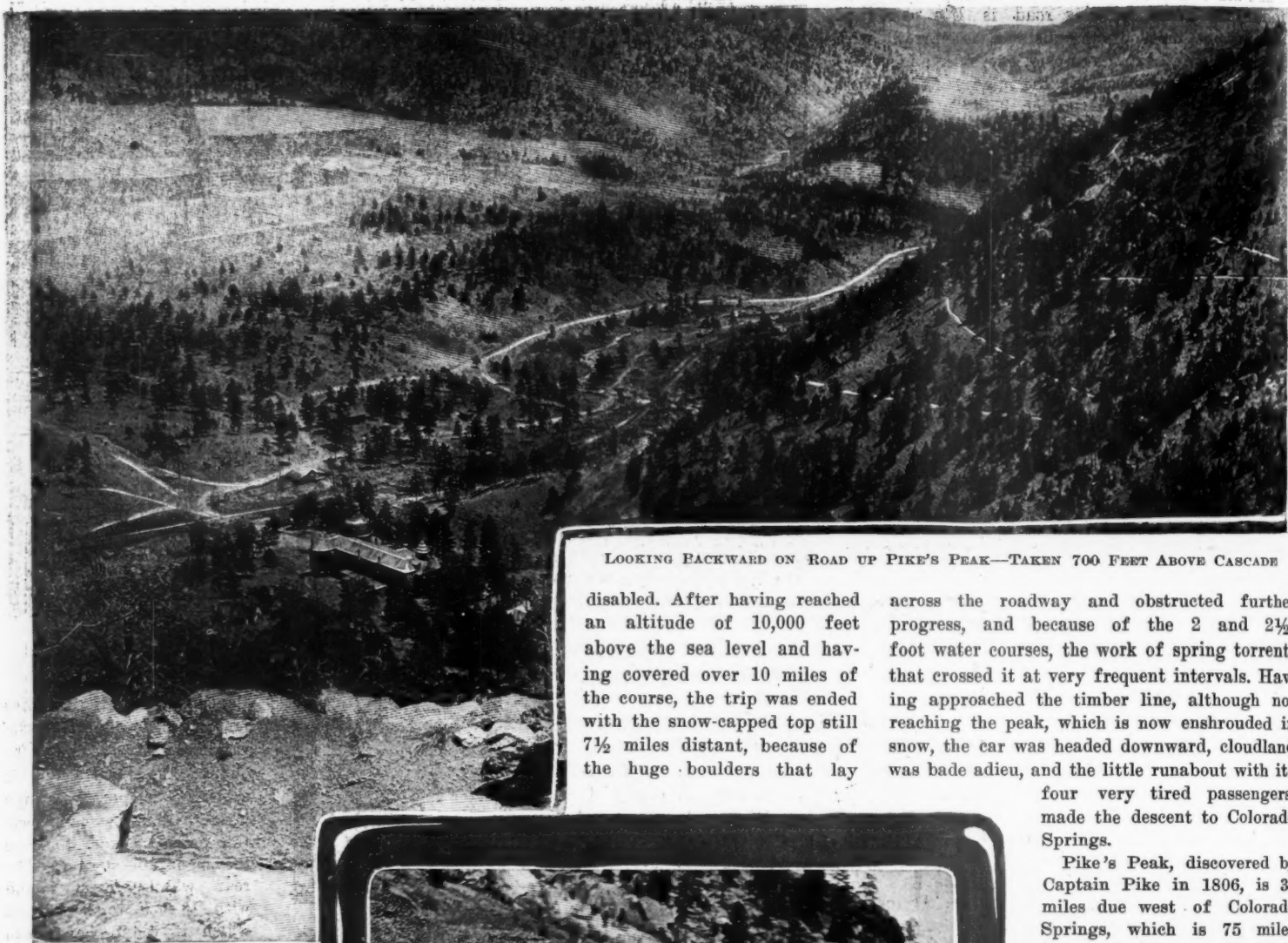
C

OLORADO SPRINGS, Col., May 21—In the third week of September motorists will have the opportunity of competing in, or witnessing the greatest grade-climbing contest of all, and one that will test the construction of every part of the motor car as well as the cool-headedness and skill of the drivers. The scene of contest will be the long and rugged sides of Pike's Peak, the eastern sentinel of the Rocky mountains, which has stood for centuries the impartial watchman of the western foothills and by whose lofty head the tides of civilization have steered their western routes over the trackless plains to the golden west.

Compared with this contest, named by its promoters the International Pike's Peak Climbing Contest, other climbs that have magnetized motorists, become easy tasks. For 18 miles the motorist must steer his machine up the narrow winding path from Cascade, a small mountain resort in the midst of the hills, to Observation peak on the cone rock summit, 6,647 feet above the starting point. In many places the old carriage road, which the mountain climbers will have to follow, is scarcely wider than the tread of the motor car; on one side at times rises the sheer precipice, hundreds of feet above, and on the

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LOOKING BACKWARD ON ROAD UP PIKE'S PEAK—TAKEN 700 FEET ABOVE CASCADE

disabled. After having reached an altitude of 10,000 feet above the sea level and having covered over 10 miles of the course, the trip was ended with the snow-capped top still $7\frac{1}{2}$ miles distant, because of the huge boulders that lay

across the roadway and obstructed further progress, and because of the 2 and $2\frac{1}{2}$ -foot water courses, the work of spring torrents that crossed it at very frequent intervals. Having approached the timber line, although not reaching the peak, which is now enshrouded in snow, the car was headed downward, cloudland was bade adieu, and the little runabout with its four very tired passengers, made the descent to Colorado Springs.

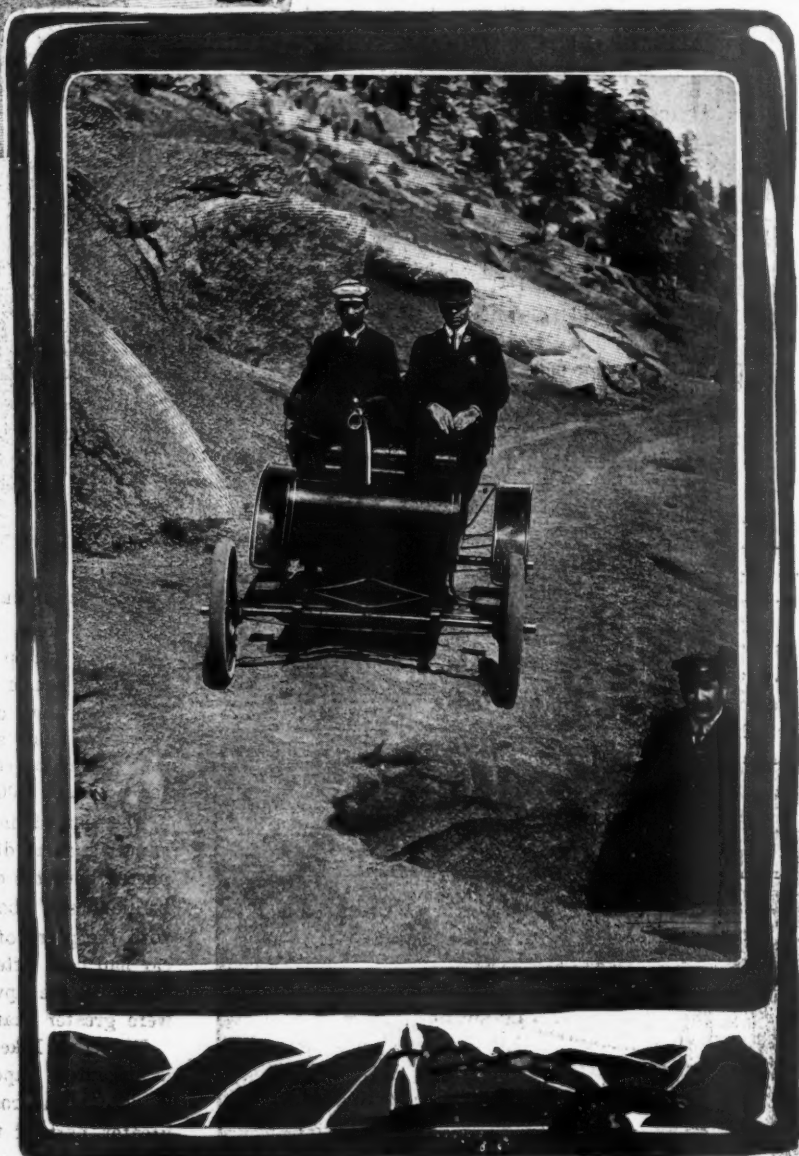
Pike's Peak, discovered by Captain Pike in 1806, is 30 miles due west of Colorado Springs, which is 75 miles south of Denver. The peak stands at an eastern turn in the Rocky mountains and rises to an elevation of 14,107 feet above sea level. It is not by any means the highest peak in the mountains in that locality, but it commands the greatest panorama of plain and mountain of any which can be scaled with any degree of ease by horse and mule teams or motor cars.

From Colorado Springs to Manitou, a mountain village, is six miles, and the road, which has an average grade of 5 per cent, is uninteresting most of the way, except for the mountain scenery unfolded as each successive rise is made. Manitou is 700 feet above Colorado Springs, and in the next 6 miles to Cascade, the real start of the mountain ascent and the starting point of the proposed climb, a further ascent of 870 feet is made. The road from Manitou starts with a 5 per cent grade, which rapidly increases to 12 per cent, and a little further on to 15. Most of the way the roadbed is as good as could be desired, being made of decomposed granite, worn fairly smooth by the horse and mule teams that for years have used the road. The

other is the deep chasm stretching below. Across the roadway are frequent water ruts, caused by the madly rushing mountain torrents in the spring time, when the sun warms the snow-capped peak, and rocks and boulders are carried down by the impetuous torrents. In other places the ascent is no steeper than the descent, for, in this climb to the vestibule of heaven, many ravines or gullies are crossed, intricate turns are made and often the roadway is a solitary pass through pillars of rock, with nothing but the rough blasted surface for the rubber tires to run upon.

Yet, for this "Pike's Peak or Bust" contest many are already preparing and motor steeds galore are expected to overcome this patriarch of the Rockies and lay new trophies at the shrine of motordom. With some it will be Pike's Peak, but with others it will be Bust.

A Motor Age man made the ascent in an Oldsmobile driven by H. Weber of the Weber Automobile Co., of Colorado Springs, the start being at 9:45 A. M. With the car and its four passengers it was neither Peak nor Bust, the Peak not being reached and the car not being

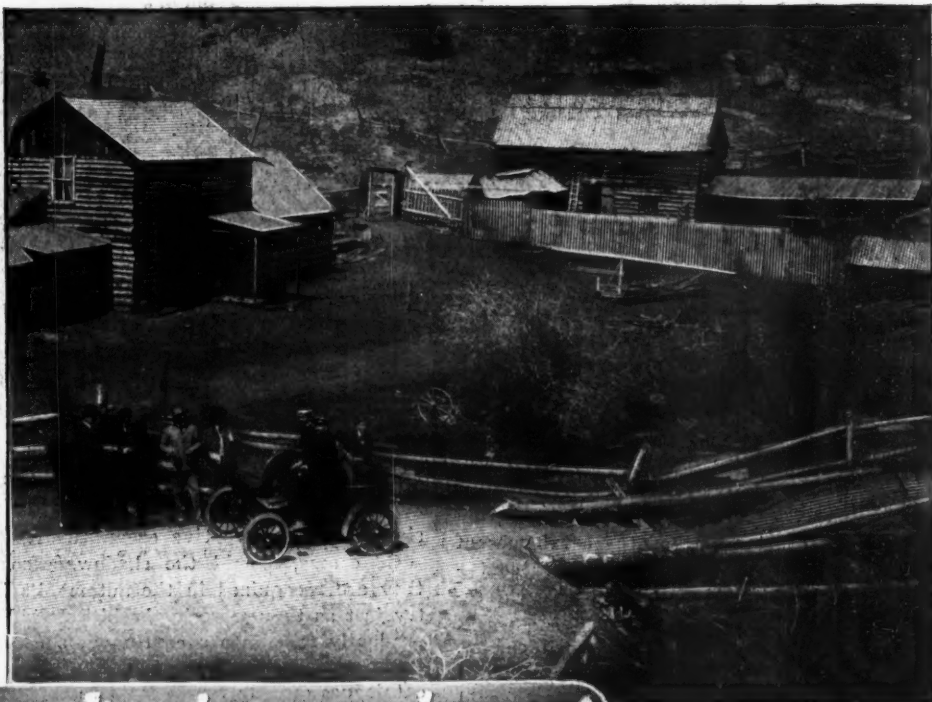


THE END OF THE PROSPECTING CLIMB, $6\frac{1}{4}$ MILES PAST CASCADE AND AT AN ELEVATION OF 9,500 FEET

mountain name for this road is Ute pass, and throughout most of the distance is narrow, with boulders going straight up on one side, and a raging torrent rushing along the other. At Rainbow falls the steepest grade is met, being a 15-per cent incline, but the road is wide part of the way, and particularly so near the top of the ascent.

Cascade is at an elevation of 7,500 feet and ½-mile after it is left behind the steep ascent to the peak begins. From this point to the top of the peak is slightly over 17 miles by the road followed, so the total elevation for the distance being 6,647 feet, there is an average rise of 7 per cent. In places the grade approaches 35 per cent, or even higher, according to the gradometer carried, and at other places it is scarcely 5 per cent. Leaving Cascade, the road turns abruptly and a little farther the famous "W" bend is met, the road taking a W course in making the rise in a sheer precipice. The grade is never less than 15 and in a good many places 25 per cent. In the first 3 miles an elevation of 700 feet is overcome and from this point Cascade can be seen in the distance. Across the mountain valleys, at one side, is seen the burro trails, and higher up dim outlines of snow-capped peaks. Farther up the side of the peak the road winds around sharp curves, one, especially, forming a 50 degree angle and having a 25 per cent grade. This will be one of the most dangerous points in the ascent, the road being little wider than the automobile, with the solid rock of the mountain rising at one side and a precipice with an 80-foot gulch at the other. At the time the MOTOR AGE car made the ascent no large car could possibly have made the turn, but the blasting away of 5 feet of solid rock, as well as the erection of a temporary platform around the outside of the road, will render the corner safe. Such short curves as this are frequently met with, but all of them can be eliminated at little expense and in short time.

Pike's Peak has only one center of population, Crow's



AT CROW'S RANCH

Ranch, which is 4 miles from Cascade and at an elevation of 3,500 feet. In one of the illustrations is shown a temporary bridge which had to be made near this point in order to cross the mountain streams. The rear wheels were wound with ½-inch rope, without which it would have been impossible to climb the steep passes. One-half mile above Crow's Ranch worse mountain streams were encountered and long stops made to temporarily repair the bridges before the run-about could safely cross, and from this point upward not a grade was met that did not average between 10 and 15 per cent.



IMPROVED BRIDGE

The mountain torrents and the huge boulders that barred the roadway were too much for a May ascent of the peak and at an elevation of 10,000 feet, when the timber line was almost reached, the trip came to an end. There were deep holes over which the car had to pass and boards and rails not being obtainable at this altitude and the party not being able to bodily lift the machine over such places, no course remained but to retreat, with the peak not 4,000 feet above.

The rugged lines of the top were plainly visible, standing as it did in the midst of a clear atmosphere above the cloud level and smiled upon by the brilliant sun above. All were loath to turn back with the glory of the prize so close at hand. The car had been lifted over rocks and boulders in many places on the upward trip, but the obstacles ahead were greater than human strength.

To get to Pike's Peak at this season of the year is absolutely impossible, as the snow at the summit is deep. The roadway at present throughout the greater part of the distance is barely wider than an automobile, so that the possibility of one car passing another will be out of the question, unless such points where this could be done are established beforehand.



UP A 15-PER CENT GRADE IN UTE PASS

MOTOR AGE

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EARLIER CATALOGUES

MOTOR AGE, receiving most of the trade literature issued by manufacturers and jobbers, has noticed that by far the greater part of the catalogues of the automobile trade—at least 90 per cent—is not in circulation before May of each season.

These catalogues should be issued earlier. If a 1905 catalogue of automobiles is intended to sell 1905 automobiles, its circulation should be commenced in the winter. If it is intended to sell 1906 automobiles, by familiarizing the recipient of it with the concern issuing the catalogue, its purpose would be served just as well by an earlier issuance each year which would thus cover both the purpose of general publicity and the purpose of direct salesmanship.

There is no important reason why catalogues should not be issued in the winter and their distribution continued throughout the spring and early summer, thereby securing not only the advantage, in making sales, of being presented to early buyers, but later that of reaching buyers as well. Delay in the issuance of catalogues may be due to three causes—procrastination; delay in finishing models of the cars to be described in the catalogues, and slow work in the actual production of the catalogue. None of these is an important reason why a catalogue should be delayed in distribution 3 months or more each year. If it is worth while spending thousands of dollars each season in catalogue making, it is worth while getting at this work so that it may bring results at the most effective time.

Nearly every manufacturer in the American trade has his models completed by the time of the national shows. It should not take 3 or 4 months after this time to get catalogues ready for mailing. Of course good illustrating and printing is necessary in a good catalogue but some of the work preparatory to the illustrating and printing of the catalogue can be done early, even if the models to be described are not completed. Anything in the line of descriptive drawing can be made just as well before the cars are finished as afterward, and it is probable in most instances that a good part of the descriptive matter can be written before the cut making commences. The detail handling of the work in order to produce the catalogues quickly and at the same time artistically is simply a matter of study of the necessities and of workmanlike arrangement of the various features of the task to prevent delay.

When each particular case is reviewed it will be found in the majority of instances that the real delay is due either to procrastination or to a pressure of work which pre-

vents the different features of catalogue making from being given immediate attention at the time of the bringing out of the new models. The remedy for either condition is simply one of executive organization.

Of course, should the shadow seasons, as they are recognized in the automobile industry just as they were in the bicycle industry, gradually fade into a continuous sunshine of trade, the desirability of making periodical catalogues quickly would cease to exist. It is probably a far cry to such a commercial condition, however, and just now the trade in all its branches is confronted with a season basis of trade which demands a season method of handling.

Season trade means promptness, and this promptness should be existent in the production of the goods catalogued and in the other ways of selling them.

AFFILIATING ROAD USERS

"THE Grinnell Auto & Garage Co. offers to assist people to break their horses to become customary to automobiles by taking a machine out any time at their place of business." This is only a news item in an Iowa paper, is not greatly to be admired as a sample of current English and is not, on the face of it, of great consequence. However, it presents a line of educative work of a usefulness that deserves greater attention than that of one automobile company in one town, and greater publicity than that of one country newspaper.

Attempts to familiarize horses with automobiles are not exactly new, but such work has never been extensive or systematically undertaken. Occasionally, here and there throughout the country, some person or concern attempts this practice for the good of automobilizing locally, as well as for the safety of horse drivers and to stimulate confidence in and good will for automobilists among the latter. There is no doubt that such work, even though it be without immediate financial return, is of immense value, both to automobilizing as a pastime and sport and to the automobile trade, whose increasing profit depends upon the rapid, widespread and permanent introduction of automobiles as vehicles for every-day use in every-day life.

It is human nature to stand up for one's rights even at the expense of immediate convenience, but it is also true that it is often best to sacrifice pride and equity to a degree in order to conciliate opposing interests and turn prejudice into favor. There is possibly too much of this talk of antagonism between automobilists and motorphobes; too much of this newspaper featuring of the fight between farmers and automobilists; too much of this publicly conceded division of road users into

classes according to the kind of conveyances they use. All conveyances are for man, and all laws are to govern men, not conveyances. The form of conveyances which men use are changed as the times change and as the ideas of the men change. The introduction of the new must include a compromise and affiliation of the new with the old until the new entirely supersedes the old.

Automobilists deserve and may demand certain privileges and certain rights. In their desire to establish the use of automobiles upon a basis of their legal rights, automobilists should not, however, lose sight of the fact that the most real ground in the introduction of the modern conveyance is gained by accruing popular favor. In other words, the most effective work that can be done is that which establishes automobilists upon a friendly relation with the whole community, whether the community be a metropolitan or a rural one.

Until the horse is relegated to other uses than that of hauling passengers and freight around the country on paved streets and paved and unpaved country highways, both motor cars and horse-drawn conveyances must use the highway together. No talk of mine and thine, and no scrap for the precedence of mine over thine will do one bit of good toward rendering the use of highways by two radically different forms of conveyances safe and satisfactory to all concerned.

It is just as important that automobilists recognize the rights of horses, as it is that horsemen recognize the rights of automobiles upon the road. The two elements of travel must exist side by side for a certain length of time, and during this time the demand for public conveyance and safety must be satisfied by the affiliation of both automobilists and horsemen into a common body of road users in which there is no distinction and no class. To bring about this desirable and necessary feeling of acquaintance, friendliness and relationship, the education of horses to constant association with automobiles is imperative.

Grinnell and a few other spots on the map should not be the only localities in which this effort to weld conflicting interests is made. It is the duty of every automobilist and of every member of the automobile trade to do a certain amount of work of this kind, whether it be in actual and pre-arranged tutoring, or simply in the exercise of a generous measure of caution and courtesy in the use of the highways.



IN A HUNDRED ACRES OF FLOWERS NEAR LOS ANGELES, CAL.—MR. AND MRS. L. L. WHITMAN

Jump Sparks



Form No. 1012.

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No. Washington, D C May 22, 1905

Motor Age

509 Mich ave, Chicago

+ Let the automobile world sit up and take notice for president Roosevelt has just taken his first automobile ride in Washington in a 4 cylinder Pope Toledo furnished by Local Pope branch.

The president and party of friends Saturday rode out Conduit road to great falls 18 miles from Washington.

The president expressed himself as "de-lighted" with the trip.

Ward.

7:2-P

AT LAST THE PRESIDENT OF THESE UNITED STATES SUCCUMBS TO THE INEVITABLE

Cape May is to be the northern Ormond. Hurry, Senator.

That transcontinental race is certainly a closely contested affair.

A knocker says that the Bennett cup race on account of the difficult course will degenerate into a stopping and starting contest.

New Orleans motorists take country rides in the shadow of the levee. Are they entitled to break the speed limit if the levee springs a leak?

According to the Tennessee automobile law, recently gone into effect, it appears that about the only vehicle which is not an automobile is a street car.

These are the days when Decoration day race meet promoters are buying the weather man many swell dinners and lots of fat imported segars.

Governor Deneen of Illinois vetoed the automobile bill because it was class legislation—probably he saw the angry faces of a certain class of voters.

The automobile club at Colorado Springs wants automobilists instead of automobiles licensed and tagged. A license tag would certainly make a swell club pin.

Suggested headline for a Chicago newspaper: "Scarlet Sox Sustained—Governor Deneen Agrees with John Farson that Automobile Licensing Is Class Legislation."

If you had spent several months of real work, a lot of real money and after a hard, hard struggle had secured the passage of an automobile bill, and then some measly old governor came along and wrote "nit" across it—wouldn't it make you mad?

THE WEEK

In Bennett cup race and French eliminating trials, over circuit d'Auvergne, not a single neutralization point to be used, French drivers preferring to have a start-to-finish contest.

Louis Chevrolet lowers mile record at Morris Park track, placing figure at 52 4-5 seconds. Oldfield defeated in match race. White steamer does mile in :53 flat.

Forty-three contestants start in severe 4-day motor car test in Scotland; all finish first day but experience continuous tire troubles.

French 1,250-mile motor cycle race over whole country progresses, with prospects of twenty of twenty-nine starters finishing.

Transcontinental race continues through mud and rain. Omaha is reached, but wet weather continues.

Racing motorists discover a northern Ormond near Cape May, N. J., and make fast test trips over it.

Fourteen cars enter for \$1,000-in-gold race at Chicago meet, Harlem track, on May 27, 29 and 30.

Italian automobile show opens in Milan with 150 cars on exhibition.

Guy Vaughn, with Decauville racer, will try for 1,000-mile record.

Cincinnati has had weather and dangerous roads for first hill-climb.

MOTOR AGE car climbs Pike's Peak under adverse conditions.

They to be first starter in French eliminating trials June 16.

Minneapolis vigorously pushes July automobile carnival.

Philadelphians grow profane because of slow deliveries.

Second annual automobile show opens in Vienna.

Old and new cars race over Paris road.

New Yorkers discuss good roads.

Even a "champeen" gets a taste of an elevator boy's life.

The perfect automobile will come when the perfect highway system comes.

Buffalo policemen now using automobiles in which to chase automobiles probably wish the speed limit was about 40 miles an hour.

In the French motor cycle endurance run only twenty-nine of the fifty-eight entrants started. Does French sporting blood run thin?

After all our experience in international cup racing it is tough luck to have the candidates for the American Vanderbilt cup race team number thirteen.

The supreme court of Massachusetts goes to show that even a supreme court may be prejudiced. Cheer up, ye common mortals who make mistakes.

Orphans' day should make more people happy than any other automobile day of the year. It is up to the automobilists to turn out in great numbers.

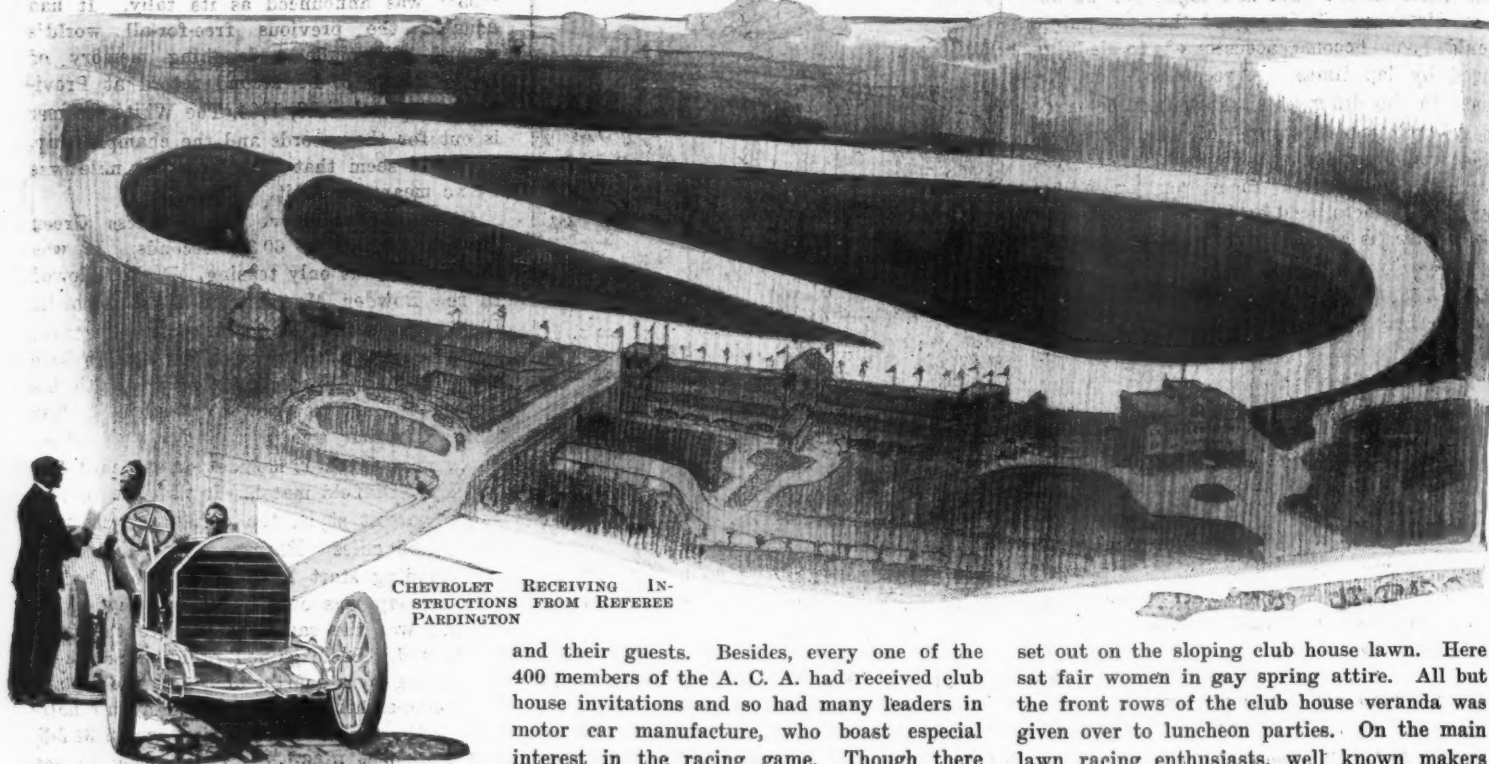
If the prospected St. Paul tour and carnival turns out as expected the name of Ledy will be added to the roll of great promoters. Whereby MOTOR AGE gets an extra free ticket to the races.

The editor of a French paper recently challenged the editor of an English paper to a race of French and English cars and his bluff has been called. There will now be a battle royal—in print.

Muttering and Sputtering has acknowledged its name, which reminds one of the London urchin arrested for stealing, who, when asked by the judge, "My boy, are you a thief?" responded, "No, your honor, but I has 'opes."



ALL HAIL TO THE NEW SPEED MONARCH



CHEVROLET RECEIVING INSTRUCTIONS FROM REFEREE PARDINGTON

New York, May 21—The automobile has supplanted the horse on his historic racing ground. Where equine kings and queens once circled the course in their speed flights the motor car monarchs have put to blush the struggles of the now out-of-date four-footed flyers with old Father Time. Louis Chevrolet has made Luke Blackburn but a memory; Webb Jay, of mighty Hanover, more than ever a hero of the dim past; and Barney Oldfield, of the great Hermis of to-day, a selling plater so far as speed goes. The betting ring has become a garage, the saddling paddock an assembly place for racing machines, and the home stretch lawn a parking ground for motor cars. On the grand stand, club house verandas and lawn, where once was the buzz of odds, weights and jockeys, the spectators talk only of horse-power, cylinders and gears. The stables, where were once millions of dollars' worth of horse flesh, are tenantless. Only the few poor four-footed beasts who drag the rollers, the watering carts and the lawn-mowers, are left to remind one of the former reign of the Horse. The Automobile is everywhere. The Motor Car is now the King.

Morris Park was inaugurated yesterday as the first exclusive automobile course in the world. A fair May day, while it graced the occasion with sunshine, reminded one by a stiff and rather cool breeze that the spring is still late. Yet the weather was auspicious enough to permit of a worthily large inaugural crowd. There were 6,000 present, which is about New York's present limit of automobile racing enthusiasm, so far as attendance goes. You must remember that in little old New York, despite the capture of Morris Park by the automobile, the horse still has its attractions even for the motor car enthusiast. There were 30,000 at the running races at Belmont Park yesterday. Hundreds of these went by automobile. The club house veranda and lawn at Morris Park were filled with members of the Morris Park Motor Racing Club

and their guests. Besides, every one of the 400 members of the A. C. A. had received club house invitations and so had many leaders in motor car manufacture, who boast especial interest in the racing game. Though there was a good crowd on the lawn the balance of the spectators were lost in the great grand stand, which has a seating capacity of 10,000. Along the homestretch in front of the grand stand twenty of the forty booking stands were taken. Those who came in cars for the most part were content to leave them on the lawn in front of the field stand or in the betting ring behind the main stand.

Secretary Reeves said that some 400 cars were thus assembled. The balance of the crowd came by steam, elevated and trolley lines, the journey consuming about three-quarters of an hour from the Rialto. The automobilists had a beautiful ride through Central Park, out Seventh avenue, Jerome avenue and Pelham road to the course.

Arrived at the track a pretty picture of vernal spring presented itself. The lawn before the stand was close-cropped and green. Green was the oval and green the distant encircling trees. An oval of yellow with a cross cut of clay, and an inner semi-circle where is the Withers' mile, constituted the courses. Furthest away at the finish end, where the south turn begins, was the racing car open garage, next to it the four storied club house, next the monster grand stand and furthest down the stretch the field stand. Chairs were

set out on the sloping club house lawn. Here sat fair women in gay spring attire. All but the front rows of the club house veranda was given over to luncheon parties. On the main lawn racing enthusiasts, well known makers and tradesmen, and others prominent in automobiling paraded and exchanged gossip. On the grand stand the general public sat and wonderingly waited for something to be doing. In front was a long line of reporters, who were already setting the telegraph instruments a-clicking with evening paper and early Sunday stories. Papers not boasting special automobile writers had sent their star descriptive writers in appreciation of the importance of this inauguration of the great Morris Park as an automobile race-course.

The whole layout of the course gives a distinct impression of vastness. At the far turn the cars seem small and away, away off. As they round the banked curve, except when they cross the opening for the kilometer straightway, they are far from distinctly seen. Even when they enter the home stretch they have but just passed the half mile pole. From here they rush down a very perceptible grade on their run home. It is a hill and the speed attained is terrific, though distance somewhat prevents it from being thoroughly realized. There is a fine view, however, of the race in the backstretch.

The track is 1.39 miles, or 7,223 feet, or approximately 15-16 miles in length. This necessitates starts at various points for different distances, and a confusing number of laps, which requires constant reference to the map in the program to figure out. The suggestion of a racing board official that the races be in the future made of so many laps instead of miles and that racing at even miles be confined solely to record trials at the various distances met with approval among the experts and critics present. This would give the start and finish in front of the grand stand, obviate confusion among the spectators and please them much better. As it was yesterday few knew when a race was over until "Wag" dropped his flag at the finish. There was no ringing of the gong or any warning save the program map and spectators' own tally when the last lap was on. It was also impossible to time inter-



TICKETS, PROGRAMS—IT TAKES MONEY TO ATTEND THE AUTOMOBILE RACES

mediate distances save for the first mile reached and fractions thereof. The two pursuit heats on the card had to be run at uneven distances. It is argued that the public would soon become accustomed to judging speed by lap times. A record of best lap times in the different classes might be made an advantageous feature of the program. This would satisfy the demand for records even in competition races run on a lap standard. There need be no comparison with new tracks, as Morris Park is for the present in a class by itself as a racing course.

The new course so far as its own contests is concerned will cause a revolution in automobile racing. Its great size, long stretches and banked turns will put a premium on power and minimize the advantage of drivers clever in negotiating sharp, flat turns and of cunningly contrived track racing machines. The high priced road juggernauts now for the first time have a chance to show their full speed on a track. They will prevail until makers seeking record honors build bigger ones with engines of higher power than they.

The mile records made yesterday prove this, even though the figures recorded at longer distances were rather behind the times expected from such performers. There was reason for the latter though. While the banking of the one turn encountered in the mile was fairly well completed that of the other was in poor shape. In the first place most of the attention had been given to the mile turn and in the second place following a week of rain the bank at the club house end had sagged and the approach to it was soft. In fact it was rather dangerous going at this end, compelling a slowing down as it was approached and causing several seemingly narrow escapes from disaster. It also affected the speed in the mile trials by preventing the starting line on the backstretch being approached from a long start under full headway. Despite all this the mile track record was cut by a driver whose first experience on a track it was. When Oldfield, Basle, Chevrolet, Jay and other drivers of the flyers get accustomed to negotiating the track, the banking itself is improved, and the track surface has had a chance to harden there is no telling how far under 50 seconds will be attained for the mile.



BARNEY OLDFIELD LOOKING FOR BASLE

The spectators and critics did not have long to wait for the momentous question of the new course's speed possibilities to be demonstrated, for the officials picked out the flying mile record trials as an overture to the track's inauguration.

Louis Chevrolet, a new find of Hollander & Tangeman, was the first to make a try. His mount was the 90-horsepower Fiat that William Wallace, the Boston amateur, piloted at the Ormond tournament. This Frenchman is utterly new at the track racing game. He has taken to it, though, like a duck to water. On the day before he had been timed unofficially in 52.1-5 seconds. The news was received with some incredulity. In less than a minute, however, he had made good. Swinging around the club house turn with a hair raising skid he tore down the backstretch, flashed by the flag, climbed the bank, circled it desperately and swept down the hill to the finish. The watches showed 52.4-5 seconds, a new track record, beating Barney Oldfield's 53-second mile made at Los Angeles, December 21, 1904.

Webb Jay was the next to try. There was much interest in seeing really how fast the new White steam flyer could go. He had been making fast miles in practice, but it was believed that he was holding back his car for its final debut. At the flag the machine leaped away like a greyhound from its leash. It reached the turn in a jiffy and

rounded it flying. Its flight was so inspiring that there was no astonishment when "53" was announced as its tally. It had equaled the previous free-for-all world's record and made a laughing memory of Louis Ross's 57.4-5 second record at Providence September 10, 1904. The White steamer is out for the records and the championship. It would seem that "53" for the mile was by no means its limit.

Oldfield next drove the Peerless Green Dragon a mile in 60.3-5 seconds. It was thought he was only teasing. Basle followed in the Bowden Mercedes in 54.4-5 seconds. He, too, was thought to be saving his main play for the match race. Walter Christie covered the mile in 56.3-5 seconds with his direct-drive 60-horsepower Christie. That ended the time trials.

The next event of moment on the card was the Basle-Oldfield match. It was run in two heats, pursuit style, the distance each time being 5.56 miles. Barney got the better of the standing start by 30 yards; but before the first lap was over Basle had made this up and was the same distance to the good at its end. Basle gained rapidly from here on, leading by a quarter of a mile the second lap, three-eighths the third and a full half-mile at the finish. Basle's time was 5:34.3-5, and Oldfield's 6:06.1-5. It was easy to see that on this track with a 60-horsepower car against a "90" Barney was outclassed.

There is a well-grounded suspicion that Basle was very kind to Oldfield, the second heat, though he might have realized that he had a cinch and so took no risks. The racers were even up the first lap. Oldfield led by 30 yards the second and Basle by 15 yards the third. Basle won by 150 yards in 5:58.4-5. Oldfield's time was 6:02.2-5.

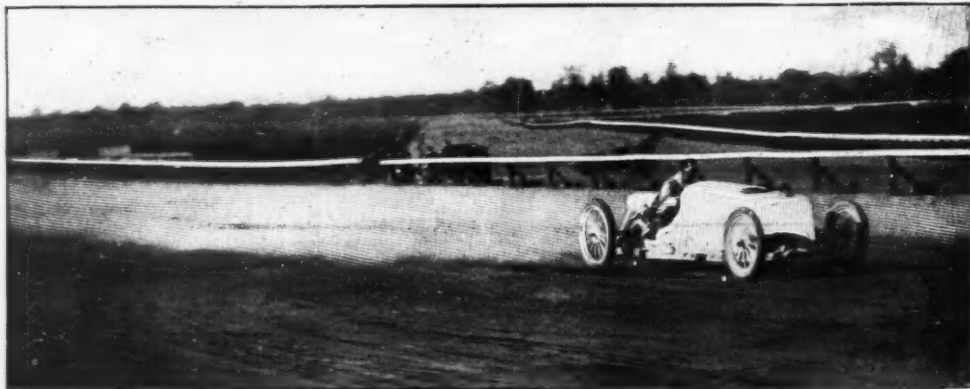
Barney good-naturedly acknowledged his defeat. "On this track," I said he, "my little 60-horsepower racing car has no chance against a 90. These banks create an entirely new style of racing, at which skill in rounding flat turns is not a factor, and a driver without fear has an even chance against the most skillful pilot. I'll be back here, though, on June 10 with my new Green Dragon. It will have as much power as the best of them. The engine for it is now in course of construction at the Peerless factory."



SPECTATORS ON THE LAWN ALONG THE HOME STRETCH



JUDGE'S STAND—RACING BOARD CHAIRMAN MORRELL IN FOREGROUND



WEBB JAY DRIVING THE WHITE STEAMER ON ITS 53-SECOND MILE

The 3-mile free-for-all run was a race for your life. It had for its starters Webb Jay and the White, Charles Basle and the Mercedes and Louis Chervolet and the Fiat. The start was a moving one. The new racing rules, you know, now provide for moving, flying and standing starts, that "rolling" and "flying" starts may not be made synonymous as they have too often been in the past. The starting point was a furlong up the home stretch. At the flag the White fairly leaped away from its gasoline rivals and led them by 30 yards as it passed the judges' stand. The Mercedes was leading the Fiat by 10 yards. Jay made a beautiful round of the turn and was 50 yards to the fore in the backstretch. When the tape was passed the second time the White had increased its lead to 75 yards. All this time the Fiat and Mercedes had been having a hammer and tongs duel, with the Italian a length in the lead. When the backstretch was reached for the last time steam began to fail the White and the foreigners crept up. Just before the last turn was reached Basle quit. At this point Chervolet passed Jay. Rounding the bank the Frenchman had a good lead, which he increased to 400 yards at the finish. The Fiat's time was 2:51 4-5 and the White's 3:04 2-5.

The summary of the races is as follows:

Mile flying start record trials—Hollander & Tangeman's 90-horsepower Fiat, driven by Louis Chevrolet, :52 4-5, world's record; horse track record, :53, by Barney Oldfield, in 60-horsepower Peerless Green Dragon, Los Angeles, Cal., December 1, 1904. White Sewing Machine Co.'s 15-20-horsepower White Steamer, driven by Webb Jay, :53; horse track steam record, :57 4-5, by Louis R. Ross, in Stanley special, Providence, R. I., September 10, 1904. Barney Oldfield, in 60-horsepower Peerless Green Dragon, 1:00 3-5. H. L. Bowden's 90-horsepower Mercedes, driven by Charles Basle, :54 4-5. Walter Christie's 60-horsepower Christie, driven by owner, :56 3-5.

Corinthian amateur mile, moving start—Won by Richard Stevens, 60-horsepower Mercedes, in 1:09; George Isham Scott, 60-horsepower Mercedes, second, in 1:21 2-5. Both cars in touring trim.

Pursuit match race, 5.56 miles, standing start—Barney Oldfield, in 60-horsepower Peerless Green Dragon, versus Charles Basle, in H. L. Bowden's 90-horsepower Mercedes—First heat won by Basle, in 5:34 3-5; Oldfield, 6:06 1-5. Second heat and match won by Basle, in 5:58 4-5; Oldfield, 6:02 2-5.

Two-mile race for cars of middle weight class—Won by Decauville Automobile Co.'s 40-horsepower Decauville, driven by Guy Vaughn; Major C. J. S. Miller's 30-horsepower Renault, second; time, 2:31 3-5.

Morris Park handicap, 5 miles—First heat won by American Auto Storage Co.'s 12-horsepower Franklin, driven by A. V. Camacho, 155 seconds allowance, actual time 6:28 2-5; A. S. Winslow's 9-horsepower Cadillac, driven by owner, 285 seconds, second; C. A. Duerr's 32-38-horsepower Royal Tourist, driven by H. L. McIlvold, 110 seconds, third. Second heat won by Harry S. Houpt's 40-horsepower Thomas, driven

by Mortimer Roberts, 120 seconds, actual time 5:49 2-5; Decauville Automobile Co.'s 40-horsepower Decauville, driven by Guy Vaughn, 35 seconds, second; White Sewing Machine Co., 15-20-horsepower White, driven by Webb Jay, scratch, third. Final won by Winslow, Cadillac, 257 seconds, actual time 8:02 2-5; Webb Jay, White, scratch, second; Camacho, Franklin, 73 seconds, third.

Inaugural cup, 3 miles, for touring cars of 30 horsepower and under, carrying three passengers besides driver, standing start with dead engines, one stop to let off and another to take on passengers—Won by American Peugeot Automobile Co.'s 30-horsepower Peugeot, driven by L. Markle, in 5:11 2-5; William Ottman's 30-horsepower Pope-Toledo, second.

Three-mile free-for-all, moving start—Won by Hollander and Tangeman's 90-horsepower Fiat, driven by Louis Chevrolet, in 2:54 4-5; White Sewing Machine Co.'s 15-20-horsepower White, driven by Webb Jay, second, in 3:04 2-5.

THE HARDEST TEST YET

Glasgow, Scotland, May 11—Yesterday there started from here forty-three automobiles bent on accomplishing a 4-day journey, the severities of the conditions of running which mark it the most severe endurance and reliability trial of motor cars ever held in Great Britain. It is a compliment to the sportsmanship of the British automobile manufacturers and dealers that only one more car entered than started.

Of the forty-three starters which left Blythwood square, twenty-eight were British vehicles, seven were imported from France, three from the United States, three from Belgium, and one from Switzerland. The American cars were two Fords and a Cadillac. The cars were classed according to the number of cylinders. There were four in the first or class for single-cylinder vehicles; nine in the second class, for two-cylinder cars, and thirty in the third class, for cars of more than two cylinders. Nineteen cars were equipped with Dunlop tires, ten with Michelin, seven with Continental, two with solid tires and one with Samson tires. The horsepower

of the cars ranged from 6, in the case of the light Wolseley, up to 35, in the case of the Martini and Belize.

The run yesterday from Glasgow to Dundee was by way of Edinburgh, Sterling and Perth, over a good road, at least by comparison with that which will be met beyond Dundee. Thirty-five of the forty-three starters arrived at the destination on time, but a great many had tire troubles. At Edinburgh Captain Deasy, who drove the Martini, retired from the contest, claiming that the car, which was a new one, did not run well. Among the drivers are Miss Dorothy Leavitt, in an 8-horsepower de Dion, and Mrs. Loder, in a 12-horsepower Argyll.

Each contestant is allowed a total of 1 hour for tire repairs on each of the 4 days, without losing points on account of tire troubles. In fact, so long as the total for the 4 days does not exceed 4 hours, regardless of its disposition by days, there will be no deduction. There will be various hill-climbing trials. Awards will be made according to the number of points credited to the cars in the different phases of their performance. Gear ratios must not be changed during trial.

RACE OF SELLING PLATERS

Paris, France, May 8—To see motor cars almost 10 years old race with 1905 cars was the rather interesting spectacle offered those who happened to be on the road from Paris to Meulan yesterday noon. La France Automobile had promoted this novel automobile contest, which was only for cars to be sold. Previous to the race there was a public show of the cars, and after the race was over they were again displayed for examination by those who wanted to purchase any of them.

Among the cars which started in the road race, which was over a distance of 24 miles, were a 1903 14-horsepower Renault, a 1903 12-horsepower Delahaye, a 1902 9-horsepower de Dietrich, a 1903 18-horsepower Panhard, a 1904 24-horsepower Boyer, a 1905 50-60-horsepower Tourand, a 1901 10-horsepower Gardner-Serpollet, a 1900 8-horsepower Panhard, and a 1904 10-horsepower Corre.

The big Tourand car had been picked as an easy winner, but nine other cars finished ahead of it. The Boyer won, covering the 24 miles in 59 minutes 26 seconds. The 18-horsepower Panhard was second in 1 hour 1 minute, followed closely by the 10-horsepower Corre. The oldest car in the race, the 1900 8-horsepower Panhard, was sixth, having covered the 24 miles in 1 hour 9 minutes 45 seconds. The event was pronounced a success notwithstanding the bad weather. Similar races are being planned for other roads, during the coming summer and fall.



BASLE IN THE BOWDEN MERCEDES WHIRLING AROUND A TURN

AMATEURS ROMP ON HILL



MIDWAY OF ROSE HILL, PADDOCK ROAD

Cincinnati, O., May 21—Rose Hill, at the far end of fashionable Avondale, never looked more lovely than last Wednesday, when the members of the Automobile Club of Cincinnati assembled at Paddock Road for the first annual hill-climb, confined strictly to members of the club with stock cars, fully equipped. The grass and trees were of the freshest shades of green and the flowers were clad gayly owing to the copious showers which had caused a postponement of a day.

"Prepare for any kind of weather," was the word sent out by President Val Duttonhofer, Jr., of the club, "for the contest comes off Wednesday sure." His warning was timely, for a smart shower began at 2 o'clock, the hour set for starting. By 2:15 it was over and the sun peeped from behind the black clouds.

The course began in the sag near the B. & O. S. W. railway depot at Bond Hill, a suburb, and continued up a hill averaging 25 per cent, it is said, for 3,975 feet or 15 feet less than $\frac{3}{4}$ -mile, almost to Reading road, an automobile thoroughfare. The hill had been put in good condition by the board of public service and the shower saved the necessity of sprinkling. The surface is of macadam, and slightly rough where latest repairs had been made.

Spectators came on street cars, in automobiles, in carriages on bicycles and on foot. They strung all along the course, but the largest crowd was at the curve near the finish, where the possibility of spills added interest to that particular spot. Handsome women in motor veils and their friends perched on the grassy hillside well up on the bank on the outside of the curve, while those eager for a nearer view lined the gutter on the most dangerous spot on the course.

Women shrieked and men fled during the free-for-all, when the 30-horsepower Pope-Toledo of Andrew Hickenlooper, rounded the turn at a speed of 45 miles an hour, skidding into the crowd, which got away not an instant too soon. Hickenlooper, a son of the late General Hickenlooper, gas magnate, was in the car, but it was driven by Chauffeur Charlie Schiller, who righted it without slackening speed and dashed over the tape in good form, covering the course in 1:00 3-5.

In this race, the most interesting of all, Colonel Max Fleischmann's Pope-Toledo overtook Dr. H. C. Wendel in an 18-horsepower Orient at the tape, although Wendel had 2 minutes start. Fleischmann's car covered the course in 1:05 4-5.

The speed developed by the Pope-Toledos caused the last race, intended for first and second machines in each of the other events, to be declared off.

The performance of Val Duttonhofer, Jr.'s, 24-horsepower Winton created merriment. In the third race, in which each car carried four passengers, it came over the tape with only the driver in sight. The moment the tape was crossed, three bare heads popped up out of the tonneau, where Val's complement of passengers had been snugly stowed away from

all wind resistance throughout the first part of the trip.

Mayor Fleischmann, an enthusiastic automobilist, was referee at the finish and by the use of telephones, controlled the starting from the finish tape. W. S. P. Oskamp and two sons, assisted by two volunteers, kept the time at the upper end, starting their stop-watches as the signal for starting was conveyed from end to end by a tap of a stick on the telephone bell.

Chief of Police Millikin was in personal charge of a detail of six of "the finest" and of several mounted police from the suburbs, who kept the track clear.

Three silver cups, gold lined, were awarded as prizes in each race. The summary of the trials is as follows:

CARS 1 TO 11 HORSEPOWER, DRIVER ONLY

Owner	Car	Time
A. W. Granger.....	Franklin.....	1:51 2-5
Harrold Roe Smith....	Knox	2:54 4-5
W. S. Crain.....	Autocar.....	3:03 1-5
Dr. H. C. Wendel.....	Orient Buckboard ..	3:32

CARS 12 TO 20 HORSEPOWER, TWO PASSENGERS

Sid Black.....	Roe	1:46
Frank Miller.....	Logan	1:51 2-5
William Stern.....	Ford	1:52 4-5
Robert Mitchell.....	White	1:54 2-5
H. E. Hudson.....	Jackson.....	1:57
A. B. Morgan.....	Franklin.....	2:05 1-2
Dr. H. C. Wendel....	Orient.....	2:15 2-5
Dr. H. C. Wendel....	Knox.....	2:33 1-5
J. H. Ratliff.....	Rambler.....	2:38 1-5
Dr. E. W. Mitchell....	Columbia.....	3:36 3-5

TOURING CARS CARRYING FOUR PASSENGERS

Robert Mitchell.....	White	1:32 3-5
Sid Black.....	Reo	1:48 2-5
Stanley Hooker.....	National	1:54 3-5
Trimble McCullough..	National	2:02 4-5
Val Duttonhofer, Jr..	Winton.....	2:06 3-5
H. F. Schaefer.....	Pope-Toledo.....	2:12 3-5
Dr. A. B. Heyl.....	National.....	2:20 3-5
John A. Payne.....	Winton.....	2:50 1-5
Dr. H. C. Wendel....	Orient.....	2:51
Dr. H. C. Wendel....	Knox.....	2:59

FREE FOR ALL

Andrew Hickenlooper..	Pope-Toledo	1:00 3-5
Max Fleischmann....	Pope-Toledo.....	1:05 4-5
Sid Black.....	Reo	1:48 2-5
Stanley Hooker.....	National	1:50 2-5
Val Duttonhofer, Jr..	Winton.....	1:53 4-5
Dr. H. C. Wendel....	Orient.....	2:26 2-5

AS CUP RACE APPROACHES

Paris, France, May 12—According to a member of the sports committee of the Automobile Club of France there will not be a neutralization of any part of the circuit d'Auvergne in the running of either the French eliminating race or of the Bennett cup race. Several manufacturers have protested a neutralization. A. Darraq is especially emphatic, asserting that it would deprive the race of all its value, inasmuch as there is no great feat in running a car a certain distance, stopping it a few minutes and then starting again; while it requires a good car, a good driver and a lot of cleverness and common sense to drive over a long difficult road without stops. Many prominent drivers also say that it is better not to have neutralizations.

The order of start in the French elimination race, June 16, has been decided upon and Thery, in his Richard-Brasier, will be the first man off. Girardot, in the C. G. & V., will be the second starter, and the others will follow in the following order: Albert Clement, Bayard-Clement; Le Blon, Hotchkiss; Lapertot, Automoto; Gabriel, de Dietrich; Hemery, Darraq; Henry Farman, Panhard; Rigoly, Gobron-Brillie; Caillois, Richard-Brasier; Sisiz, Renault; Henriot, Bayard-Clement;

Achille Fournier, Hotchkiss; Rougier, de Dietrich; Wagner, Darraq; Heath, Panhard; Stead, Richard-Brasier; Bernin, Renault; Villemain, Bayard-Clement; Laverne, Hotchkiss; Duray, de Dietrich; de la Touloubre, Darraq; and Teste, Panhard.

The racers of all the French contestants are reported to be completed and only a few of them have not yet been tried on the circuit. Some exceedingly fast driving is credited to Gabriel, who is said to have driven at certain stages on the course at a speed of nearly 92 miles an hour. Those who have seen him drive say that he displayed daring driving which few others would have the courage to do. He is now all but favorite, and, barring accidents, ought to finish well up in front.

It is rumored that the German Automobile Club has informed the Automobile Club of France that it will hold it responsible for accidents to German cars, owing to the dangerous course which the French club selected.

Preparations in England for the British eliminating trials are progressing. There is not so much talk about the event as there was last year. It has been decided that C. S. Rolls will drive one of the Wolseley cars.

FOUND—A SUMMER ORMOND

CAPE MAY, N. J., May 20—A northern Ormond has been discovered—the northern Ormond, rather. Alexander Winton says so. So does Percy Owen and Secretary S. M. Butler, of the A. C. A., and "Batch" and Charles Gould and a lot of others "in the know." And on a Friday, too. But not a mishap occurred to mar the success of the discovery, barring a little bulldog stubbornness on the part of the famous Bullet Secundus, which refused to return after having carried Winton and Colonel Frank N. Barksdale, of the Pennsylvania railroad, almost 4 miles away from Cape May. A. H. Chadbourne, of the Automobile Club of Philadelphia, however, came to the rescue and towed the outfit back to the starting point, where a few minutes' work with the proper tools soon put things into shape again.

It was a Winton crowd from A to Z, but it was not a Winton enterprise. Peter Shields, president of the Cape May Real Estate Co., which is spending hundreds of thousands of dollars yearly in an effort to rehabilitate Cape May, which was at one time the seaside resort par excellence on the Jersey coast, conceived the idea that the immensely wide, hard and level beach could be used for automobile racing. Local automobilists had told him so, and he determined to have a try at it, anyhow. He knows Winton, and asked him to send down from Cleveland one of his fast cars for a test. Winton accepted, named the date and sent the word along the line. Very little thought and discussion had been given the matter, for the news that a test of the beach was to be made was not known in Philadelphia till a day or two before. A few invitations having been hastily sent out, the bulk of the party left Philadelphia on Thursday afternoon, and on their arrival at Cape May were taken in tow by Mr. Shields and shown around the city.

In the evening, after dining at the hotel, the entire party was forced to eat another supper, with a talkfest and liquid accompaniments on the side. But all hands showed up at breakfast bright and early next morning, eager for the trials.

It was a beautiful day. The sun never shone brighter. The beach is hard and smooth and wide enough to accommodate twenty starters in a scratch race and allow ample room between. A brisk wind tore off the spume from the crests of the breakers as they rolled majestically in from the Atlantic, which just here is always dotted with inward and outward-bound commerce of Philadelphia weathering the cape. It was not so strong, however, as to interfere with the comfort of the trial party.

The test was entirely successful. Several hours were devoted to it, and the course traversed numerous times by all the experts present. Quick



BILLIARD TABLE LEVELNESS OF CAPE MAY BEACH

stops and turns were made to see the effect on the sand, but the slight trail left by the Bullet's wheels even on the shortest turns, with the inside rear wheel turning practically on a pivot, failed to feaze the surface. Winton said that the Cape May strand is harder than that of Ormond.

The local course, extending from Cold Spring Inlet to the foot of Ocean street, in Cape May proper, measures probably a trifle over 3 miles. Nobody knew the exact measurements, and no measured mile was laid off for the purpose of seeing if the Bullet could approach her southern performances. Everything was painfully impromptu. Even the Bullet was not timed up for the occasion. But at that the test showed that the mile straightaway world's record for beach courses is at Cape May's mercy.

There was quite a lot of desultory stop-watching done, and it was positively asserted by more than one split-second owner that Winton had six or seven times gone a mile in 35 seconds or less. But, unfortunately, it was all estimate and guess-work. That the Bullet was going some was evident even to the fellows used to that sort of thing. The tyros simply gasped when the thing flashed by.

"Here she comes!" would be the cry. And away up the beach a black speck would show against the white sand. "I'll snap it when she reaches that stairway leading down from the Boardwalk. That's more than a mile." And the owner of the ticker would nervously await the proper moment. Click! And then a wait. "Five—ten—fifteen—twenty—twenty-five—thirty"—click! "Gee whiz, fellers; thirty-four and a fifth! What do you know about that?"

But, unfortunately, as observed above, the unpremeditatedness of the whole affair was painfully apparent. One of the party—an expert judge of speed, too—said he had never seen a car go so fast before. World's records probably went by the board, but no one knew it for sure.

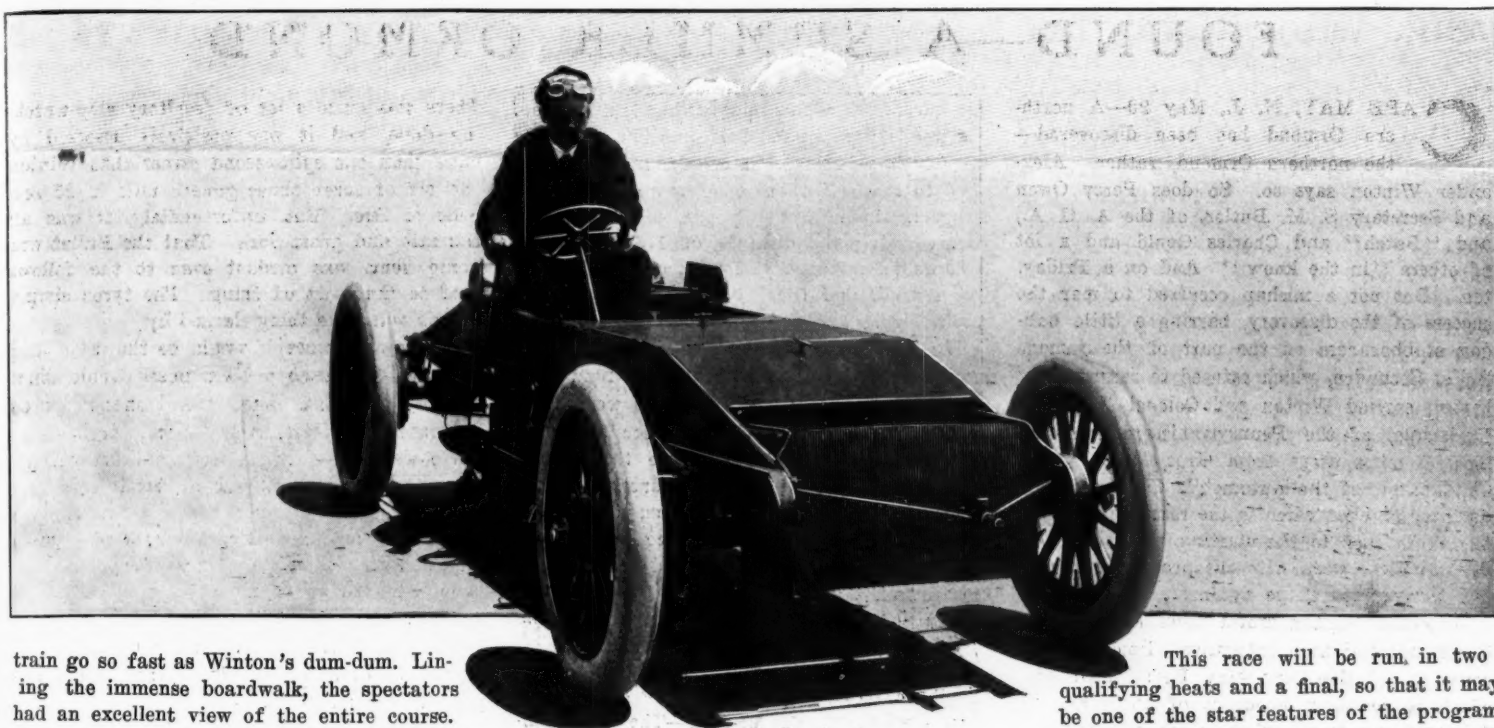
This was in the morning. So also was an impromptu trial of the new boulevard which parallels the beach, on the other side of the boardwalk, from Sewell's Point to Cape May City. Winton, after a number of fast spins over this beautifully smooth and level 90-foot-wide driveway, pronounced it fit, with some preparation, for mile world's road record trials. The experts seemed to think this a big thing in favor of Cape May's aspirations as an automobile racing center. When the tide is in, racing on the boulevard; when it is out, on the beach. With the record tables separating beach and road records, Cape May has a chance to collar the kilometer and mile records anyhow—thus argued the elect.

It appears that Mr. Shields, the host, had let the Cape May public into the game, through the local papers, in an announcement that a public test would be made when the tide was out in the afternoon. Great was the disappointment, therefore, when the crowd, which had gathered along the course, was informed that the tests had taken place in the morning. Shields sought out Winton and explained the disappointment of the citizens to him.

"We'll give it to 'em all over again," said Winton. And they did. About 3 o'clock the Bullet and three or four touring Wintons belonging to members of the visiting party lined up for an impromptu race. Of course, the projectile was true to its name, although Winton had it under "double wraps." Then followed a half-dozen fast trips up and down the beach, with some rapid turns and stops. The crowd gasped—many had never seen a railroad



THE PRINCIPALS OF THE EXAMINATION OF CAPE MAY BEACH



train go so fast as Winton's dum-dum. Lining the immense boardwalk, the spectators had an excellent view of the entire course. The afternoon trials served to confirm the possibilities of Cape May's strand as an automobile racing course—safe and comfortable to competitors and spectators alike.

Before leaving for Philadelphia on the evening train, Mr. Winton said: "This beach is simply marvelous. It is absolutely unrivaled in its firmness and smoothness, and is so wide and gradual in its slope as to be practically level. Aside from the single handicap of its limited length, it is a better beach than Ormond or Ostend, and will eventually capture the mile and kilometer records. Cape May is to be congratulated on its unrivaled natural automobile speedway."

Summed up, the advantages of this course over Ormond for short-distance races and time trials are: Its convenience of access, being within 3 hours of New York and 90 minutes of Philadelphia; that it can be reached over hard roads by automobiles from both cities; that a boardwalk runs practically its entire length, making it possible for thousands of spectators to safely watch the sport; that a straightaway 90-foot drive, level as a floor and equally fast and smooth, runs parallel with the beach course on the landward side of the boardwalk.

In addition, one of the best stretches of road in the country leads back 12 miles to Cape May Court House, and with the expenditure of less than half the amount of money claimed to be necessary to build some of the "dream" speedways recently agitated, an ideal 30-mile course for long distance events could be prepared. The sound back of Sewell's Point is to be used for motor boat races. Last, but by no means least, the people and the authorities are favorable to all such projects, not alone in Cape May proper, but along such a 30-mile course as could be built. Indeed, for much of the distance such a road would pass through a practically uninhabited section, as level as a billiard table every foot of the way. The assurance that no legal restrictions would interfere with the running of races is no mean consideration in the light of recent experiences of promoters of similar races on Long Island.

Cape May "certainly does look good!"

Among those who made up the party, besides Messrs. Winton, Butler, Owen, Batchelder, Barksdale and Shields, were Colonel Charles L. Hopkins, president of the Southern

WINTON AND BULLET II ON CAPE MAY BEACH

Railroad of New Jersey; F. G. Edwards, of the Cape May Real Estate Co.; A. E. Maltby, manager of the Philadelphia branch of the Winton company; A. E. Chadbourne, J. N. Wilkins, Charles J. Swain, F. M. Depew, J. R. Overpeck, F. M. Johnson and other members of the Automobile Club of Philadelphia; besides half a dozen writers representing the Philadelphia dailies and the automobile publications.

At the conversazione and feed, which followed soon after dinner Thursday night—the latter, by the way, being what is termed a "sea-food banquet"—Colonel Barksdale, manager of the advertising department of the Pennsylvania railroad, acted as toastmaster. The orator par excellence of the symposium—and there were not a few of them—was Colonel C. L. Hopkins, of the Southern railroad. His wit was infectious, and he got in some telling points during the course of his remarks. Mayor Thomas W. Millett, of Cape May, and James Taylor, who represented the city council, were also present, and they elicited rounds of applause when they assured the company that not only would no legal restrictions be placed in the way of popularizing Cape May as an automobile racing center, but that the authorities and people were anxious to have the sport taken up here and would lend their undivided support to further the project.

BIGGEST FIELD OF ALL

Chicago, Ill., May 23—Fourteen cars that ought to go a mile in a minute or less will scrap for \$1,000 in gold at the Harlem race track during the 3-day spring meet of the Chicago Automobile Club. The surprisingly large list of entries for this event is as follows:

NAME OF CAR	ENTRANT	DRIVER
Comet	Carl G. Fisher	Charles Weidley
Locomotive	H. E. Thomas	H. E. Thomas
Gray Wolf	E. H. R. Green	J. Illingworth
Pope-Toledo	E. H. R. Green	Oille Savin
White	White S. M. Co.	Webb Jay
Harroun	R. W. Harroun	R. W. Harroun
Pope-Toledo	Carl G. Fisher	Carl G. Fisher
Green Dragon	Barney Oldfield	Barney Oldfield
Thomas	C. A. Coey	Dan Canary
Franklin	E. H. R. Green	W. F. Winchester
Tincher	Earl Kiser	Earl Kiser
Pope-Toledo	O. F. Weber Co.	Charles Soules
Apperson	J. A. Ellis	J. A. Ellis
Flat	C. J. S. Miller	L. Chevrolet

This race will be run in two qualifying heats and a final, so that it may be one of the star features of the program of each day. The final on Decoration day will be contested by the winners of the heats and the driver finishing second in the faster heat. The other unusual race of the meeting is the inter-club match race between teams from the Automobile Club of America and the Chicago Automobile Club for the Harold E. Thomas trophy. Major C. J. S. Miller, driving his newly acquired 90-horsepower Fiat racer, and Walter Christie, driving his 60-horsepower Christie, will represent the New York club, and Carl Fisher, in either his Premier Comet or his new Pope-Toledo track racer, and C. A. Coey, in the new six-cylinder Thomas racer, will wear the purple and gold of the Chicago club.

Local entries for the other events of the meet insure one of the largest fields ever known at a track race meeting in this country. The success of the meet is up to the weather man.

The officials are as follows: Referee, S. A. Miles; judges, A. G. Batchelder, Ezra Kirk, Charles H. Tucker; timers, H. N. Van Sicklen, K. Franklin Peterson, George K. Barrett; starter, Fred J. Wagner; clerk of course, Charles P. Root; assistant clerks, James Levy, Howard Corbett; umpires, Donald A. Sage, Robert Tarrant, Jr., F. E. Edwards; scorers, George G. Greenberg, Louis Geyler, Fred Pardee; announcer, W. H. Pickens; C. A. C. press representative, Richard Bacon, Jr.

The track has been put into excellent condition and the racing cars from outside Chicago are beginning to arrive. Colonel E. H. R. Green, of Terrell, Tex., was first on hand, appearing last Saturday with the Packard Gray Wolf and the Pope-Toledo. His light Franklin racer, which will be driven by W. F. Winchester, is expected tomorrow, as are also Barney Oldfield's Green Dragon, the Thomas racer and Carl Fisher's two cars. In fact, it is probable that the whole aggregation will be on hand by Thursday, in order to get 2 days of practice on the track.

The meeting of all of the officials will be held at the Chicago Automobile Club Friday night in order that the details of track management may be settled and the duties of each official thoroughly established, it being the intention to make an extraordinary effort to conduct the meet on ideal lines.

TOUR WHOLE COUNTRY

Motor Cycles Driven Throughout France To Test Endurance and Speed—Peugeot's Lead

Paris, France, May 12—The motor cycle endurance run through France, arranged by the Autocycle Club of France, which started last Saturday, is now almost completed, and when the competitors again reach Paris they will have covered nearly 1,250 miles over both the best and worst roads of the country. The latest reports from along the route indicate that probably twenty of the twenty-nine starters will complete the test.

Fifty-eight motor cycles were entered for the event. The twenty-nine starters were divided into three classes—two of motor cycles divided by cylinder capacity, and one comprising tri-cars. There were only two competitors in the last, and only four in the second class. The daily run has varied from 62½ to 193 miles. A maximum of 150 points has been possible each day.

The first-day starters were twenty-four French, two German, one English and two Belgian machines. They were sent off in groups of from two to five at intervals of 2 minutes. The first day's run was from Paris to Dijon, a distance of 193 miles. Tiercelin, on an Alcyon motor cycle, was the first to reach the destination, having covered the distance of 193 miles in 10 hours 10 minutes. Faivre on a Terrot was second, followed by Schweitzer on a Minerva and Cissac on a Peugeot.

The second day the run was from Dijon to St. Etienne, with a kilometer standing start speed trial near Beaune. In this event Foulon, on a Bruneau, made the fastest time, covering the kilometer in 1:12 4-5. Tiercelin, on an Alcyon, was second in 1:13 2-5; Blatge, on a Minerva, third, in 1:15 4-5, and Bonnard, on a Werner, fourth, in 1:16 2-5. Giuppone, on a Peugeot, was the first to arrive in St. Etienne, and was closely followed by Bucquet, on a Griffon; Cissac on a Peugeot; Blatge, on a Minerva, and Bonnard, on a Werner.

The feature on the third day was the climb of Republic hill, on the road from St. Etienne to Avignon. The climb distance was 3.85 miles, and it proved a rather easy task for Giuppone on his Peugeot, who required 12:28 to get to the top of the hill. Another Peugeot, ridden by Cissac, secured second place, going up hill in 14:06. The Bruneau, ridden by Foulon, was third, in 15:09, and the Belgian Minerva, ridden by Blatge, captured fourth place in 16:28. The two Peugeots arrived in Avignon ahead of the rest of the starters. Then came Le Metais, on an N. S. U.; Champoiseau, on a Peugeot, and Blatge, on the Minerva.

The shortest run of the series was that from Avignon to Marseilles, the distance covered being only 68½ miles. Near Salon there was a general stop and a kilometer flying start competition was held. It was a close contest, Thomas, on a Magali, covering the distance in 56 seconds, while Cissac and Champoiseau, both riding Peugeots, tied for second place, having covered the kilometer in 56 1-5 seconds. Blatge, on the Minerva, was fourth, and the Griffon, with Bucquet in the saddle, made next best time. The arrival in Marseilles was almost in the same order as that of the previous day, the Peugeots being in the lead.

There was hardly half an hour of clear sky on the fifth day, when the motor cyclists rode from Marseilles to Narbonne. It rained all day except for a few minutes in the afternoon. The roads were in fearful condition and there was much skidding, but all the starters managed to reach Narbonne before midnight. The Peugeot, ridden by Giuppone, made the best run, covering the distance of 173½ miles in 9 hours 22 minutes. Thomas, on the Magali, was second, and the Werner, ridden by Bonnard, third.

The weather was fine the sixth day, and more people were passed along the road than on the previous days. The crowds were, however, never very enthusiastic, except in the larger towns and villages, where the officials and, in some cases, as at Toulouse, the governors of the provinces and the mayors, awaited the contestants. It was once more Giuppone, on the Peugeot, who showed the way into the control, Agen, to the twenty-four contestants still in the run. He rode from Narbonne to Agen, 170 miles, in 8 hours 56 minutes.

THREATENS THOUSAND MARK

New York, N. Y., May 23—The long distance fever still rages here. Starting at noon next Monday at Empire City track Guy Vaughan will attempt with that veteran campaigner, the 40-horsepower Decauville, to beat 25 hours 50 minutes 18 seconds, the figures scored by Charles G. Wridgway in his recent 1,000-mile record run at Brighton Beach track.

Secretary Reeves is figuring on a long distance daylight race at Morris Park on June 10, the day of the opening of the national circuit. It will probably be at 300 miles so that the times may be compared with last year's Vanderbilt race results. The start will be around 6 o'clock in the morning with the finish preceding the beginning of the sprint races in the afternoon. The idea of an all-day and night race was abandoned on account of its danger and the intending competitors being unable to agree on an acceptable method of lighting. Wridgway and Vaughan are sure starters and the Royal Tourist, Thomas, Peugeot, Cleveland, Pope-Toledo and Mercedes also probable contenders.

Joe Nelson's trial for the mile record with the Lightning Bug is the event of the card for the Decoration day meet at Empire City track.

MILLER MORE THAN GAME

New York, N. Y., May 24—Special Telegram—Major C. J. S. Miller has bought the 90-horsepower Fiat mile record holder that he may make good his promise to compete for the Thomas trophy at Chicago, his Renault having a broken radiator which could not be repaired in time to ship west for the race. He will drive the car himself in the club team match race to conform to the cup conditions, but Louis Chevrolet will pilot the car in the thousand dollar open.

Major Miller will campaign the car on the national circuit, and either he or Chevrolet will race it on the Italian team in the Vanderbilt race, Hollander & Tangeman having the privilege of naming the car for one of the two remaining places on the team. Major Miller has challenged Bowden to race Basle and the Mercedes against Chevrolet and the Fiat at the opening of the national circuit at Morris Park on June 10. The Christie racer was shipped to Chicago yesterday, and the Fiat will be sent today. Messrs. Christie and Miller left for the west last night and Batchelder, Wagner and Miles will start tomorrow morning.

READY FOR MOUNTAINS

Huss and Megargel, Drivers of Transcontinental Tire Contest Cars, Approach the Rockies

Des Moines, Ia., May 20—We left Sheffield, Ill., at 3:30 P. M., Wednesday, and started to parade our cars through some of the worst gumbo mud I ever came in contact with. As we passed the small towns the people would gaze in wonderment at us and exclaim: "How did you get through the mud? Wonderful." Or they would ask: "Mister, don't you need a horse?"

We were stuck twice between the towns of Mineral and Anawan, but by hard work and strong language we got safely through. We passed two men near Geneseo holding a mule hitched to a buggy, and just as we passed, the mule departed for a neighboring field, buggy and all. The last we saw was the buggy on one side of a tree and the mule on the other. I used to drive mules myself, and could appreciate the situation.

We arrived in Geneseo at 9:30 P. M., tired, wet and hungry. We spent the night there, and left at 7:30 the next morning, as we had 2 hours' work on the car getting the mud out of our engine. Every one seemed astonished to think we got safely through, as it is almost impossible for a horse and buggy. We had half a dozen different routes given us, each said to be the best way, so we went ahead at a guess. We got as far as Green River without any trouble, but there we found a good sized river running directly across the road. By taking a running start we splashed across, the water being 2 feet deep in some places. How we got across without short circuits I don't know, but luck was on our side, even if the weather was not.

We reached Rock Island at 1:30 P. M. and found a large crowd waiting for us. We were escorted over to the island to the United States arsenal, where numerous photos were taken. Mr. Mason, of the Mason Carriage Works, gave us a fine reception, and attended to our cars and helped us in every way possible. Mr. Rubison, president of the Davenport Automobile Club, served us with an excellent dinner, and we enjoyed it very much. We stayed in Davenport 2 hours to get the tanks filled with water and gasoline and have a few photos taken, and were then escorted out of town by a medley of cars, all with tooting horns and making a great noise. We finished the day by driving to Wilton, Ia., 28 miles to the westward, where we spent the night, hoping for fair weather next day.

We left Wilton quite late in the morning, as we had some work to do on the car, and arrived at Iowa City at 11:30 A. M. After a burned dinner we started for Brookline. About 5 miles before we reached Brookline we struck a bad rut in the road, broke our chain and turned our rear axle. This delayed us an hour and we arrived there at 7:45 P. M. Megargel showed up 2 hours later, his delay being caused by tire trouble.

We left Brookline early today and drove as far as Newton. Before we finished eating dinner Megargel drove up. The afternoon was marked by varied experiences. The first trouble was a broken side spring, caused by going into a ditch; next one rear tire blew up; next we had to ford a stream and got stuck in the middle, as the water filled our carburetor.

er and engine. After 3 hours' time, we succeeded in getting out and arrived in Des Moines at 7 P. M.—DWIGHT HUSS.

Omaha, Neb., May 22—Special Telegram—We left Des Moines at 5 P. M. Sunday, after having spent most of the day looking over our machines, which were badly loosened up by the terribly rough roads. W. E. Moyer, of Cedar Rapids, was our pilot out of the city. We arrived in Dexter at 9 P. M. without any more serious trouble than lifting our machines out of deep ruts. My tires look like Weary Willy's pants, awfully shabby and ragged, but they have certainly given me splendid service, as far as Omaha anyway. Monday morning we left Dexter early and arrived in Omaha at 7 P. M. without a particle of trouble. The roads seem to be improving as we move to the westward and I trust they will continue so. At every little town we pass through the people seem to be waiting for us and give us a hearty welcome as we pass. We have been very fortunate thus far and have not caused any accidents by scaring horses along the roads. We expect to be in Omaha all day tomorrow, looking over our machines and fitting up for the trip through the mountains.—DWIGHT HUSS.

THE HOOSIER CENSUS

South Bend, Ind., May 22—If one may judge from the number of those owners who have paid the license fee set by a law of the last Indiana state legislature, then, outside of Indianapolis, South Bend has more automobiles than any other city in Indiana.

In Indianapolis there are estimated to be about 500 automobiles. Thus far but 278 Indianapolis owners have paid the state license. South Bend is next with eighty owners who have paid up. As for the rest of the larger cities of the state, the figures are instructive, if not amusing. In Evansville, the second city of the state, only fourteen owners have paid the license fee, but Fort Wayne makes a better showing, with seventy-eight. From New Albany, a city of the third class, not a dollar has been contributed to the secretary of state's automobile fund. The other large cities of the state have issued the following number of licenses: Lafayette, thirty-five; Muncie, fifty-seven; Richmond, forty-five; Anderson, thirty-one; Logansport, twenty; Kokomo, seventeen; Marion, forty; Hammond, nine, and Michigan City, four. These numbers will probably be greatly increased in the near future if positive steps are taken to enforce the law, and such is understood to be the case.

ITALY'S BIG SHOW

Milan, Italy, May 12—Among the 150 automobiles shown at the automobile show of Milan, which opened yesterday, are Wintons, Whites and Oldsmobiles, and these American cars were always the center of a great deal of curiosity.

The show is the best ever held in Italy in number of exhibitors and of cars and in decoration of stands. All the prominent manufacturers of Italy, headed by such concerns as the makers of the Fiat, Itala, Ceirano, Frashini, have their latest cars on display, while among the French and German concerns there is keen rivalry, the Rochet-Schneider, Peugeot, Mercedes, Maurer-Union, Adler, Bayard-Clement, Darracq, C. G. & V. and Durkopp being represented. The motor cycle section is important, and both foreign and domestic two-wheelers are displayed in large numbers.

NOT ANTI-SELDENISTIC

Manager A. M. C. M. A. Denies Its Main Purpose Is To Fight A. L. A. M. Over Basic Patent

Chicago, Ill., May 23—"The aims of the American Motor Car Manufacturing Association have been greatly misunderstood by the automobile public in general," said Roger B. McMullen, general manager of the association, to a *MOTOR AGE* man in a conversation in the company's offices in the Marquette building today. "We are in the field for the good of motoring and good roads," continued Mr. McMullen. "At all of our monthly meetings the members discuss features of the automobile trade that have a direct bearing on the members of the association and their patrons. The aims and purposes of our association are, first, arrange for suitable public expositions of the products manufactured by the members, race meets and other means of publicity and advertisement; second, to increase the interest of the public in the purchase and use of motor cars, and to confer and discuss periodically the best means to effect that result; third, to fully and properly advertise the respective merits of motor cars manufactured by members of the association and to secure the desirable rates of transportation and shipment; fourth, to furnish to respective agents, dealing in the products of members of the association, at regular and convenient intervals, full information regarding the trade in motor cars, and the latest information regarding the construction and merits of motor cars manufactured by the members; fifth, in every proper and lawful manner to further the sale of the products of the members of the association, and to insure for themselves, as far as possible, a staple and increasing trade; sixth, to promote public interest in the good roads movement, and to arouse public opinion to oppose all legislation which discriminates against the proper and lawful use of motor cars."

The May meeting of the association will be held in the Manhattan hotel, New York, on May 26, when the Chicago and New York show question will come up for consideration. According to members of the association it is certain that it will be represented at a show in New York and also in Chicago, but as to the possibilities of conducting a show of its own nothing definite has been obtained.

When questioned concerning the attitude of the association with reference to the Selden patent, Mr. McMullen stated that the association is not actively engaged in combating this particular feature of the automobile industry. Certain members of the association are at the present time engaged in such pursuit, but it is said those members are not asking the assistance of the association, and that the association is not granting any. The issue of immediate importance between the A. L. A. M. and the A. M. C. M. A. is that of the shows, and also the matter of having licensed and unlicensed cars sold in the same stores.

NEED HIGHWAY SCHOOL

Syracuse, N. Y., May 21—At the good roads conference, called by Director L. H. Bailey, of the Cornell College of Agriculture, and held Tuesday and Wednesday, at Ithaca, a number of highway commissioners from various parts of the state were present. One of the objects of the meeting was to stimulate interest in

the proposed good roads school for the establishment of which a bill has been introduced in the New York legislature to appropriate \$10,000. President Jacob Schurman, of Cornell, opened the Tuesday morning session with a statement of the progress of good roads in this country. He said he wished the money that had been appropriated for the new barge canal had been appropriated for the improvement of roads.

Professor Bailey said a good roads school was badly needed. W. Peirpont White, of Utica, gave as an argument for good roads that they would increase the output of the farms at a lessened cost. He said 416 towns of the state had adopted the money system of highway improvement, placing 36,000 miles of roads under that system, or about one-half the total road mileage of the state. These towns will receive from the state \$500,000. He explained the proposed \$50,000,000 bond issue for road improvement and said nobody need fear the taxation resulting from this, as the bill provided that only 5 per cent of the amount need be raised each year.

Wednesday afternoon a demonstration of a steam roller was given. A road was plowed up and torn to pieces, after which it was rolled into condition by the expert in charge of the roller. In the evening an address was given by State Engineer Henry Van Alstyne.

PLAN MONSTER MARCH

Minneapolis, Minn., May 22—The annual automobile parade of Minneapolis will occur June 1, and from present indications the affair will greatly outdistance that of last year, when 350 machines were in line. Preparations are being made for the parade, which will be given under the joint auspices of the Minneapolis Automobile club and the Minneapolis Retail Automobile Dealers Association.

As last year, the parade will take place at the close of the afternoon, so that all owners of cars in the city can participate. The line will probably form on Park avenue, and then proceed down town. The enthusiasm which has been aroused over the automobile carnival, to be held a month later, has awakened the automobilists, and the managers of the parade anticipate a record-breaking turnout of machines. There are nearly 1,200 cars owned in Minneapolis and fully 700 of these ought to be in the parade. Decorated cars will participate for prizes. It is probable that there will be a section devoted to commercial cars, many of which are in daily use in and around the Twin Cities.

SECOND TO VIENNA

Budapest, Hungary, May 9—The second international automobile show held in this city and second in size in Austria only to the annual Vienna show was opened in this city 2 days ago under the patronage of many of the city's most prominent men. The show gives a good idea of the progress made by Austrian manufacturers, who are almost all represented. As usual among foreign cars, the French machines are conspicuous, there being among those shown the Richard-Brasier, Delaunay-Belleville, Peugeot, de Dietrich and Bayard-Clement. The United States is represented by the Oldsmobile, Germany by the Benz and England by the Wolseley. There are also a great many motor cycles, mostly German and Austrian, and a large number of parts exhibits. The show is being largely attended by all classes of citizens.

AFFAIRS OF AUTOMOBILE CLUB MEN

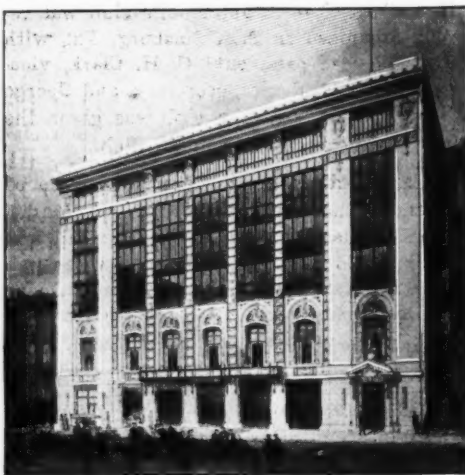
For Parentless Mosquitoes—Orphans' day will be observed in Newark, N. J., June 14, when the New Jersey Automobile and Motor Club will give the orphans of that city and of the Oranges a ride and entertainment of some suitable sort.

Governor Club Men's Guest—The Automobile Club of Wayne County, Ind., will escort Governor Hanly from Richmond to Bethel, where he will deliver the Memorial day address on May 30. The club has issued a letter to people living along the route to be followed, asking them to co-operate by caring for their horses so that accidents will not be likely.

Increased 100 Per Cent—The Rockford Automobile Club, of Rockford, Ill., was organized in December, 1903, by thirty-three charter members and now has sixty-nine members. N. F. Thompson is president; O. W. Johnson, vice-president; H. W. Dickerman, secretary, and A. W. Robertson, treasurer. The officers and D. P. Cutler and E. K. Barnes form the board of directors.

Members To Retard Spark—At a recent meeting of the Rhode Island Automobile Club, in Providence, it was decided to hold a race meet September 9 if possible. There was a discussion concerning complaints which had been made that members of the club drive their cars faster than the local regulations permit and a resolution was passed urging members to observe the regulations.

Sweldest Home of All—The architect's plans for the new club house in New York of the Automobile Club of America have been completed. The exterior will be simple but dignified. The materials are to be light stone, marble or Indiana limestone, white brick and terra cotta. The building will contain commodious club rooms, four storage floors for automobiles and a machine and repair shop and power plant. It will be seven stories high, including the basement, with the members' entrance at the Broadway end and the attendants' entrance at the Eighth avenue end. Next to the attendants' entrance will be two large doors, the one to the right for cars to go in and that to the left for cars to go out. A checker will be on duty at these doors at all times and will take the time of arrival and departure of each car, reporting to its owner. The ground floor will have open space to accommodate fifty to seventy-five cars and seven stands for washing cars, a members' locker room and an office for the superintendent of the garage. There will be turntables in front of the two elevators. This floor will be finished with a special glazed fireproof material proven to resist oils and gasoline. In the basement will be an electric generating plant with engines, pumps and other operating machinery. Under the sidewalk vault will be the gasoline storage, sub-divided into numerous tanks so that the contents of each will not exceed the amount prescribed by the fire department. These tanks will be filled from pipes terminating at the curbstone line, so that the filling pipe from the gasoline wagon will not cross the sidewalk, and the gasoline will be conveyed to the automobiles by measuring pumps. The electric elevators will be of 4 tons capacity, or ample to take any car, and



REPRODUCTION OF ARCHITECTS' SKETCH OF NEW CLUB HOUSE OF A. C. A.

will have platforms 10 by 18 feet. They will be covered with a non-absorbent, fireproof, glazed covering and the sides will be of iron. On the storage floors there will be movable partitions with screw bases to partition off stalls for those who desire to keep their cars in locked spaces. The repair department and machine shop have been located on the top floor, which will be practically entirely surrounded by glass, in addition to having a skylight. It will be equipped with most modern machine tools, electrically driven. A large space will be provided in which chauffeurs may take apart and examine their own cars, passing through a gate to the machine foreman such parts as they wish to have expert machine work done on. In this department will also be the club dynamometer, which will be arranged to take the full measurements of efficiency, fuel consumption, power, etc., of all makes of cars. The elevators and stairways are separated from the rest of the building by a fire wall with large automatic fire doors at each floor, and with one connecting to the main assembly room so that it will be possible to bring up cars and run them into this room to illustrate lectures. The club rooms will be an especial feature. Commencing at the main entrance, and after passing through the vestibule, there will be a large lobby 25 feet wide and extending the entire depth of the building, the superintendent's office and members' locker rooms being at the left. At the end of this lobby a staircase ascends to the second floor, with a small staircase leading up three steps to the ladies' waiting room, which will be under the landing of the grand staircase and lighted by a large dome skylight. On the second floor will be a long room extending through two stories, in renaissance style, with a beam ceiling. The grill room, connecting with the assembly room by six large folding doors, will seat 300 people. Adjoining the grill room will be the secretary's office, etc., and on its other side will be the bar, the serving room and the kitchen. On the mezzanine floor above will be the members' billiard room, etc., and garage space. At the westerly end of this floor will be the recreation rooms for the chauffeurs, one for Americans and one for foreigners, and on the floors above will be the chauffeurs' locker and toilet rooms. There will be no illuminating gas in the building,

safety from breakdown in the electric service and also night service to be provided by a storage battery in the basement. The building will be fireproof throughout. Experiments having demonstrated that the most effective way of putting out burning gasoline is by throwing sand on it, all of the columns in the building will be provided with hooks, on which will be hung buckets of sand and tubes containing the usual fire extinguishers.

All Enthusiasts—New Richmond, Wis., has an enthusiastic little club of nine or ten members, which keeps the automobile affairs of the town humming. There are ten automobiles in New Richmond, a city of less than 2,000 inhabitants. A central garage is now being built, which will be equipped in the most thorough manner for storage and repairs. The entire automobile population of the town will join in the St. Paul tour and automobile festival.

Fish, Frogs and Fowl—The Automobile Club of Syracuse had its first club run of the season last Friday afternoon, when a trip was made to South Bay, where a chicken, fish and frogs' leg dinner was served. The automobilists left the city at 5:30 o'clock and half an hour later the cars were drawn up at Crownhardt's inn, 15 miles distant. The return trip was made at 8 o'clock. This run was the first of a series that will be made to nearby places during the summer months, it being planned to hold one every week. The membership of the club is now over 100, with twenty applications in the hands of the committee on membership. The officers of the club are: President, W. L. Brown; vice-president, Giles H. Stilwell; second vice-president, George H. Larabee, and secretary and treasurer, Foreman Wilkinson.

Northwestern Boom—The Minneapolis Automobile Club took a new lease on life with its annual meeting last week. The meeting was one of the most enthusiastic ever held by the Minneapolis organization, and a summer of unusual activity was mapped out. Colonel Frank M. Joyce was unanimously elected president, E. J. Phelps, the retiring president, refusing to let his name be used as a candidate for re-election, but consenting to serve as a trustee. Asa Paine was elected vice-president; R. G. Smith, secretary, and A. E. Paegel, treasurer. The trustees elected were E. J. Phelps, Dr. C. E. Dutton, Harry Pence, Horace Lowry and C. F. Haglin. The best of feeling exists between the club and the Minneapolis dealers' association, and the two bodies will co-operate to a considerable extent in furthering the plans for the summer's entertainment. Last year the Minneapolis Automobile Club was not an active organization, but it will take hold this year with the intention of making the season a big success. Hill-climbing contests, race meets, parades and club runs are being planned. At present all energy is directed toward the success of the entertainment for the St. Paul tour visitors. The club will undertake to raise \$5,000 for the Minneapolis day program. The Minneapolis club members were again the guests of the St. Paul club at a smoker last Friday night, when further plans for the coming carnival were discussed. Minneapolis will entertain May 27, when St.

Paul tutomobilists will be the visitors, and, as this will be third joint session of the two clubs, plans should be well matured by June 1.

Loyal to Three A's—The Davenport Automobile Club, of Davenport, Iowa, decided at a recent meeting to affiliate with the American Automobile Association and not to join a state organization should one be formed.

Has a Manager—At a recent meeting of motorists of Eldora, Iowa, an automobile club was organized. C. E. Greef was elected president; H. F. Greef, vice-president; E. Greef, secretary; S. M. H. Greef, treasurer, and K. D. Greef, general manager. No name has yet been selected.

Quakers Secure New Home—After a 3 months' search the location committee of the Automobile Club of Philadelphia has made arrangements whereby new quarters will be secured in the palatial establishment of the Manufacturers' Club, at 1409 Walnut street. Its present office, at 509 Real Estate building, will be vacated during the present week. Besides much-needed room, the rapidly-growing club secures the use of many of the conveniences which go with membership in the Manufacturers' Club, including cafe and bar facilities. A large meeting room, a long-felt want, is also secured by the new move. This room is amply large also for smokers, banquets and other entertainments projected by the club. With the enlarged quarters a vigorous recruiting campaign is to be immediately embarked upon, with a view of doubling

the club's present membership of 220. With 1,700 eligibles in the city this is not looked upon as impossible.

New C. A. C.—An automobile club was recently organized in St. Johnsbury, Va., with T. R. Stiles as president; C. H. Clark, vice-president; C. T. Ranlet, secretary, and George Burbank, treasurer. The club was given the name of Caledonia Automobile Club.

Maine Election—At the annual election of officers of the Automobile Club of Maine, held in Portland, Nathaniel M. Marshall was elected president; Robert B. Low, vice-president; Albert H. Hinds, secretary, and Henry F. Merrill, treasurer. Committees on law, runs, auditing, finance and membership were appointed.

Orphans' Day Season Opener—The Automobile Club of Pittsburg is getting down to business with vim under its newly elected president, George E. Turner. All the committees for the year have been appointed. Orphans' day on June 7, the first big event of the club this year and the first of its kind ever held in Pittsburg, promises to be a great day. Forty-five automobiles have already been promised for the occasion and by June 1 Secretary Smith expects to have fully seventy-five machines in line. All the large garages have promised from three to five machines each and responses from private owners indicate substantial interest in this unique charity. The institutions which have already promised to send their orphans are the Curtis Home, 112; Pittsburg and Alle-

gheny Protestant Orphan Asylum, 100; St. Joseph Orphan Asylum, 200; Episcopal Church Home, sixty-five; Protestant Home for Boys, twelve; United Presbyterian Orphan Home, forty-five; Memorial Home for Crippled Children, twelve.

Motor Cyclists Ballot—At the annual election of officers of the Buffalo Motor Cycle Club, recently held in Buffalo, Charles Becker was elected president; Dr. Bernard Brady, vice-president; E. F. Zimmerman, treasurer and secretary; W. C. Chadeayne, captain, and Dr. C. E. Cummings, engineer.

The Tie That Binds—There are eighteen owners of motor cars in Hamilton, O., and at a recent meeting they decided to organize a club. C. E. Hemp was chosen chairman of a temporary organization. It was agreed that the name of the organization should be the Hamilton Automobile Club.

Many Country Homes—At a recent meeting of the Fort Wayne Automobile Club, of Fort Wayne, Ind., a committee was appointed to try to arrange with farmers for the use of their farms as places of rest, and for the entertainment of touring parties, special signs to be erected on such farms at the expense of the club.

Another for Long Island—Motorists of Jamaica, L. I., have organized the Jamaica Automobile Club, with William Yule, president; Percy James, vice-president; Charles Crossman, secretary, and William Furman, treasurer. Dr. H. L. Noble, W. H. Lyall, Thomas Chapman and the officers as directors.

PICTURESQUE FOREST MOTOR HIGHWAY

Bordeaux, France, May 9—Much interest is shown in the south of France in the proposed country automobile boulevard which is to pass through such towns as Arcachon and Biarritz, and when completed will be 100 miles long. When such a thoroughfare was first suggested only automobilists were interested, but now people generally in this section are assisting the promoters, believing that such a boulevard will bring thousands of tourists into this portion of the country, to the profit of its inhabitants.

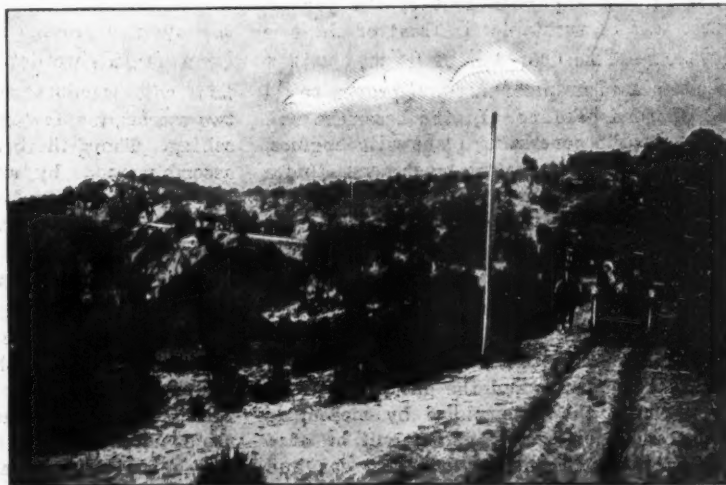
Not long ago about fifty interested persons made an inspection tour of the suggested route. It required them 4 days to cover the 100 miles by horseback and by buggy. It was the intention of the excursionists to make the trip by motor car, but the roads are exceedingly narrow in many places, in bad shape and almost impassable to automobiles.



SURVEYING THE PROPOSED 100-MILE AUTOMOBIL-
ING ROAD IN SOUTHERN FRANCE

It was impossible to always follow the direct road on account of the swamps and the generally wet condition of the soil along the sea, which the road follows. The tourists went extensively through several forests, and over some of the roads built by the Spaniards and Moors hundreds of years ago. Many villages were passed where the inhabitants yet live in small wooden houses and huts centuries old. One of these buildings, erected by Moors, is now the public school of the village in which it is located.

As far as scenery is concerned, those on the tour said it compared favorably with anything on the continent. A large sum of money will be needed to make the boulevard, but several well known capitalists of Bordeaux, Paris and other large cities have announced their willingness to finance the enterprise and see the boulevard rapidly constructed.



LEGAL SENSE AND NONSENSE

SPEED ITS OWN ANTIDOTE

By mounting policemen on motor cycles and giving them automobiles to drive, Superintendent of Police Bull, of Buffalo, has hauled in some of the violators of the speed law. It must be admitted, however, that in trying to overhaul offenders the policemen themselves have thrown consideration for the law and for the safety of others to the winds. The suggestion of Mr. Bull, mentioned in MOTOR AGE last week, that patrolmen be given motor cycles so that they could overtake automobilists who were driving too fast, was carried out after a fashion. The city did not buy the machines, but borrowed two Auto-Bi's from the maker. Matthew Sholer, chauffeur for Harry Hamlin, was the first to be gathered in by a policeman on a motor cycle.

On Sunday automobiles were pressed into service against the scorchers. Ten policemen in three cars started out in the morning to cruise for speed-mad drivers. One of the police cars sighted a machine going pretty fast near the corner of Front avenue and Georgie street, but the other fellow saw the policeman first and increased the speed of his car in the effort to get away. Dashing around corners, horns honking loudly, and darting at terrific pace over the asphalt streets, the two cars covered nearly the whole west side before the coppers gave up the hopeless chase. The other two police cars, however, had better luck, each bagging a physician. One got Dr. John S. McFarland, a former well-known Yale football player, and the other took in Dr. Edward L. Sugnet.

LICENSE CONSTITUTIONAL

The supreme court of Massachusetts decided last week that the state registration and numbering law is constitutional. "There can be no question of the right of the legislature in the exercise of the police power to regulate the driving of automobiles and motor cycles on the public highways of the commonwealth," says Justice Loring in the decision. "They are capable of being driven and are apt to be driven at such a high rate of speed that when not properly driven are so dangerous as to make some regulations necessary for the safety of others on the public highways. Nothing in the act has been called to our attention which is not a proper exercise of this power. This act being passed by the general court, it is not necessary to consider whether a somewhat similar act can be passed by a city. The registration fee of \$2, required to be paid by section 1, is plainly a license fee and not a tax."

The decision is the final outcome of the case of F. Shirley Boyd, of Cambridge, who had been convicted of driving his automobile without displaying his number plainly. He fought the case through to the supreme court.

DOLLAR AN HOUR INCREASE

A bill was introduced into the house of delegates at St. Louis last week, which, if passed, will make the legal cost of a year's motoring in St. Louis and St. Louis county \$14.50. The present St. Louis motor car and motor cycle license in St. Louis is \$10, in St. Louis county, which means anywhere outside of the city limits, \$2.50, and the new bill provides for a driving license to cost \$2 more. The bill provides for the examination of each driver by the inspector of boilers and elevators, who will pass on his abil-

ity to drive a car; two days in each month to be set aside for this purpose. The speed limit will be raised from the present 8 miles an hour at the rate of a dollar an hour for this extra contribution of \$2.

It was argued in favor of this bill that it would reduce the number of accidents from reckless driving and at the same time lessen the number of violations of the speed-limit, which Mayor Wells himself thinks is now very low.

NEW ONTARIO REQUIREMENTS

After a long discussion the municipal committee of the legislature of Ontario, Canada, has adopted changes in the automobile law which provide that the license fee be raised from \$2 to \$5 for motor cars of less than 10 horsepower, and to \$10 for car above that power; that the numbers on cars be 6 inches high instead of 3 inches; that the provincial secretaries be empowered to revoke licenses or suspend drivers; that motorists be compelled to slow to 7 miles an hour when within 100 feet of a horse drawn vehicle, excepting in cities, towns and incorporated villages, and that the motor of a car be stopped while the latter is standing in the street.

WISCONSIN HESITATES

The senate of Wisconsin, in session in Madison, last week referred to the judiciary committee the second substitute for the Stoddall bill, after Senator Rogers had pointed out that he believed the bill unconstitutional, and that even if passed by the senate the supreme court would declare it void. Speaking of the numbering of cars the Senator said:

"That the use of the public streets is a right, and not a privilege is conceded, and if it be a right, then it belongs to all its citizens without discrimination, and whether upon the highway, as pedestrians, or in a conveyance drawn by animals, or propelled by some kind of motive power, there can be no arbitrary restrictions put upon one class of people who use the highway, that is not equally restrictive and applicable to all other classes.

"We need an automobile law, but we don't want this one. There ought to be a stringent law to prevent reckless driving of automobiles by reckless people, who have little regard for any one but themselves, who have no regard for the rights of others, and no respect for law, either common or written. There can be no question that the state has a right to exercise its police power; that it has the right to regulate the speed of automobiles and to provide many other lawful regulations. This we do not dispute, and this we urge, but we do say you shall not discriminate against a few people in their free and rightful use of the highway. Horses are dangerous upon the highway and are often driven at reckless speed. Motor cycles run at much greater speed than automobiles; street cars frighten horses and cause them to run away, and serious accidents result therefrom, and yet none of these are required to register, pay a fee, or carry an obnoxious police tag."

Before Senator Rogers spoke there was a general impression that the bill would be passed, but afterwards there was a unanimous vote to refer the bill to the judiciary committee.

THE ILLINOIS BILL VETOED

Last Thursday, the last of the 10-day period of consideration allowed the governor in which to sign or veto bills passed by the state legislature, Governor Deneen, of Illinois, vetoed the bill known as the Chicago Automobile Club bill, and which was passed near the close of the present session of the legislature after one of the fiercest struggles in the history of such bills. The reason given by Governor Deneen for vetoing the bill was that it would, if passed, injure the good roads movement, of which the governor is an active champion. The connection between the automobile bill and the good roads campaign in Illinois is that automobilists are prominent in the highway improvement work, and the sanctioning of a bill considered favorable to them would possibly arouse the natural antagonism of the farmers to anything in which the automobilists are interested.

Another reason suggested for the vetoing of the bill is that it created class legislation on account of the provision for licensing. It is probable, however, that the general antagonism of the rural districts to the bill is the real reason behind Governor Deneen's action. So far as class legislation is concerned the majority of the automobilists of the state were in favor of the bill, inasmuch as it compromised their desires with what it would be possible to secure at the present time in the way of concessions from prejudiced legislators, only a small proportion of the automobilists of the state being in favor of radical action at this time against all class legislation.

The passage of the bill, even though vetoed, has served one good purpose. Without its introduction the Heintz bill would undoubtedly have been passed and possibly signed, in which case all manner of hardships would have been imposed upon automobilists. The passage of the present bill and its vetoing prevents any other legislation concerning the regulation of automobiles until the legislature convenes next year.

ALLOWS 25 MILES AN HOUR

The senate committee of the Michigan legislature, in session in Lansing, reported favorably last week upon the Holmes automobile bill. Several important changes were made, however, the principal one being the increase of the maximum speed limit in the country, from 20 to 25 miles an hour; from 12 to 15 miles an hour in residence districts, and the reducing of the limit from 10 to 8 miles an hour in business sections of cities and towns. For a first violation of the law a fine of not more than \$25 and costs is to be imposed; \$50 and costs for a second offense, and \$100 and costs or not more than 30 days in jail or in the Detroit house of correction for subsequent offenses. The fees and fines are to be used by the state highway department.

LAST CALL FOR NUMBERS

According to City Electrician William Carroll, of Chicago, there are 1,000 owners of motor cars in the city who have not yet secured new number plates or taken out licenses. Carroll says that he will be patient until noon, Saturday, of this week. The police department will be given instructions to then arrest all motorists driving cars without numbers or with last year's numbers.



SEMI-ELLIPTIC SPRINGS

Chester, Pa.—Editor MOTOR AGE—Why is it that so many automobile makers, both American and foreign, use semi-elliptic springs? Would not full elliptics give a more elastic suspension and with such could not solid tires be used to advantage? It might be that full-elliptic springs would result in a higher center of gravity, but this could be overcome by having the springs fastened beneath the axle, instead of above it. With such a spring suspension radius rods could be used at both axles for freeing the springs from driving strain.—T. B.

The easy riding qualities of a car depend upon the location of the load and the resiliency. The latter is taken care of by the springs and the tires. It has been demonstrated that the resiliency should be at the road contact point, which, of course, is the tire. No arrangement of a spring wheel, or special suspension scheme, will give the easy-riding qualities of a pneumatic tire. Full-elliptic springs are used by American and European manufacturers. Every designer has his own ideas on this subject, which is shown by the various spring combinations in use at the present time.

DEGREE OF TIRE INFLATION

Dubuque, Ia.—Editor MOTOR AGE—Please inform me how many pounds pressure to use in 3-inch tires on a 1,200-pound machine?—JOHN BLESSING.

On a car as specified a pressure of 75 pounds would be about right. A good way to tell when any tire is properly inflated is to take hold of the upper part of the wheel with both hands, and moving forward and backwards crosswise of the car. While doing this watch the point where the tire joins the rim and keep pumping until the tire does not roll between the felloe and the ground. When not inflated, the tire will have considerable movement, but when properly inflated for its load, the tire and wheel will move as a unit. Many small gauges that can be attached to show the pressure are cheap and necessarily inaccurate.

GASOLINE TERMS

Manchester, Ia.—Editor MOTOR AGE—When we purchase gasoline and are told it is of 70 or 74 test what is meant, fire test, specific gravity or a degree as registered by a Baume hydrometer? I have asked a wholesaler, and he says fire test; a retailer says specific gravity; another retailer says Baume hydrometer test. For example, I had two lots of gasoline tested. Each showed a temperature test of 63 degrees. On a Baume hydrometer one tested 66 degrees, the other 65. Now, where am I at? That sold me and testing 66 degrees was said to be 74 test gasoline; the other was sold as 70 to 72.—E. O. R.

When gasoline is purchased the term 66, 70 or 74 refers to its specific gravity as registered on a Baume hydrometer, and has no connection with the flash or fire test. Baume readings are correct only at 60 degrees Fahrenheit. As the temperature rises the fluid becomes light, and as it falls it becomes heavier. The ratio is approximately, for every 10 degrees below 60 degrees, 1 degree to the reading on the hydrometer. If the temperature is above 60 degrees, the same amount is added. The trouble experienced in paying for 70 and receiving 65 was probably because the dealer had had the barrel for some time. Originally it registered 72 degrees, but the natural evaporation of the lighter components had gradually reduced the gravity.

MECHANICAL INLET VALVES

Syracuse, N. Y.—Editor MOTOR AGE—Can automatic inlet valves be used to advantage on a motor with 4 by 5-inch cylinders, the speed to be 1,200 revolutions per minute? Would it be possible to get more power out of this motor with mechanical inlets? Would it be advisable to use the same size of valves, whether automatically or mechanically operated?—H. L.

If mechanically operated larger valves may be used, and MOTOR AGE advises that construction. There will be a slight increase in the power to be gotten from a motor, if the valves are mechanical. With an automatic valve of the proper size its weight is necessarily such that its action is sluggish, unless a heavy spring is used, which makes the motor hard to start. Some makers using automatic valves have each inlet consist of two or more small valves to counteract this effect.

MOTOR SUSPENSION

Grand Rapids, Mich.—Editor MOTOR AGE—What are the advantages of carrying the motor and change speed gear of an automobile on a sub-frame, instead of on the side pieces of the main frame?—H. P. P.

Attaching the motor and transmission directly to the frame subjects them to all bending and twisting strains occurring in the side members. When these parts are supported by drop frames, or by a sub-frame, the twisting is absorbed by these parts and does not affect the motor or transmission.

TWO-CYCLE DESIGN

Cayuga, Ind.—Editor MOTOR AGE—I am preparing to build a single-cylinder two-cycle engine of the following general dimensions for vehicle or marine use: $5\frac{1}{2}$ -inch stroke; 6-inch bore; built-up shaft, as in bicycle motors, shaft and crank $1\frac{1}{4}$ inches in diameter; solid end I-beam connecting rod, with bronze bearings, $1\frac{1}{2}$ by $2\frac{1}{4}$ inches at piston end and $1\frac{1}{4}$ by $2\frac{1}{4}$ inches at crank end; shaft bearings $1\frac{1}{4}$ by 4 inches, bronze; inlet on transfer port end $\frac{3}{8}$

by 4 inches, and exhaust $\frac{1}{2}$ by 4 inches, both ribbed; compression space 1 inch; ignition touch spark in center of cylinder head; fly wheel diameter 18 inches, and rim weight 100 pounds. Please correct any errors of design and the probable revolutions per minute and horsepower.—J. W. M.

The motor described is of generally good proportions. MOTOR AGE would suggest that a ball thrust collar be inserted beside the crank shaft disks to take the propeller thrust if the motor is for a boat. Also, arrange to use jump spark ignition, as it will be cheaper to install and probably more satisfactory. The compression space is too small. Make it at least $1\frac{1}{2}$ inches deep and the compression will be sufficiently high. The port lengths are good, but change the exhaust depth to $\frac{3}{8}$ of an inch and the inlet to $\frac{5}{8}$ of an inch. The rim weight of the fly wheel could be cut to 75 pounds on an 18-inch wheel. This motor should be able to speed 1,200 revolutions per minute and develop 11 horsepower.

MUFFLER DESIGN

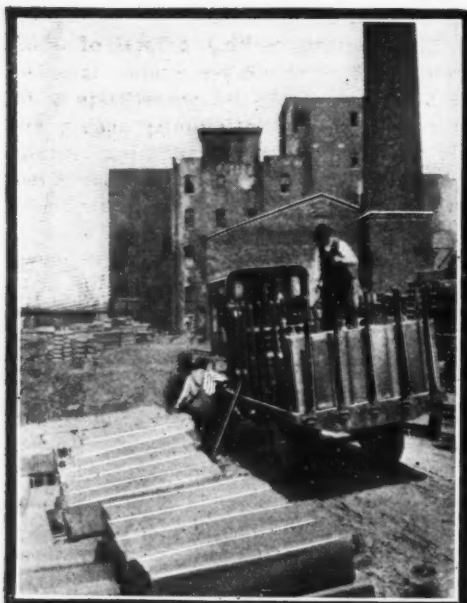
Fort Wayne, Ind.—Editor MOTOR AGE—What is the cause of back pressure from a muffler, and could a check valve be used to advantage in the muffler pipe near the inlet valves to counteract it? What is supposed to be the proportionate area between the cross sections of the muffler piping and that of the cylinder bore, and what is the best speed for exhaust gases when passing out through the valves? What should be the relative capacity of the muffler with respect to the cylinder capacity and, also, what are the relative proportions of the openings into and out of the muffler?—S. D.

A check valve would be of no use, as the back pressure in a muffler is caused by its construction being such as to retard the exit of the gases. Design the exhaust valve for a velocity of 90 feet per second and make the diameter of the exhaust pipe 80 per cent of the valve diameter. The muffler volume should be six times the cylinder volume, with an outlet one-third that of the inlet.

CAUSE OF WATER BOILING

Brooklyn, N. Y.—Editor MOTOR AGE—Having read your publication for some time, and having seen other motorists helped out of their troubles through the Readers' Clearing House, I herewith ask information of you or your other readers. I have a 20-horsepower 1904 tonneau car, with two-cylinder opposed, four-cycle engine, which has not caused any trouble until recently. Kindly tell me what causes the water to boil over so badly as to force its way out through the filling plug when the latter is screwed down tight and the vent pipe is open; also give a remedy for the trouble. The engine is getting enough oil and one cylinder and piston are new.—A. F.

If the car once ran well when the weather was as warm as it is now, the trouble is probably in the circulating system. The radiator may be so clogged as to prevent free circulation. If this is the case, it can be cleared out by blowing with steam pressure. Notice if the circulating pump is operative. To make sure that the trouble is not in the pump, the cover should be removed and while some one turns the motor by hand, take notice that the pump parts operate. If the pump is working, the system is not clogged, the spark not too much retarded, the cylinders properly lubricated and pistons not tight, the trouble must be due to inefficient radiating surface.



The Realm of the Commercial Car



AN INTERESTING demonstration of the commercial wagon for heavy service is now being made in Chicago for the Chicago Telephone Co. by the Chicago Commercial Auto Mfg. Co., of Harvey, Ill., with a 50-horsepower, 5-ton truck. This truck was described in MOTOR AGE some weeks ago and the one in question is of the company's standard construction. It was put into this particular line of demonstration work on the 18th of April and since then has been in daily use. The work done is of the heaviest type. One day the wagon hauls from 5 to 10-ton loads of tile for underground wire conduits over many of the worst streets in the city and on another day it is loaded with huge spindles of cable, the sight of which everyone is familiar with and which are stretched underground through the tiles. Every grade of street is traveled over, as in Chicago most of the streets used in suburban districts are wretchedly paved with cedar blocks, that are in places as rough as the Giant's Causeway and in others are bog holes of sand or mud. Good streets are used whenever possible and the car tracks are followed if along the line of route.

The wagon is doing an all-road as well as all-weather demonstration. For several weeks rain has fallen in Chicago on an average of 3 days a week, making many streets a continuation of water pools for blocks at a time, rendering others almost impassable because of the mud or sand on them and causing the asphalt pavements to be unmercifully slippery to big trucks with a 6-ton load even when not traveling faster than 4 miles an hour.

The truck is supplied with a trailer of 5-ton carrying capacity which is attached to the

rear of it and the two together have become familiar sights in many parts of the city traveling at 3 miles an hour with a 10 to 12-ton load. When using the trailer the wagon travels most of the distance on the slow speed, except on finely paved streets, and owing to this slow rate of travel the trailer has not been used much of late and the wagon with its load traveling much of the distance on high speed at 12 to 15 miles per hour. It has been found advisable to do this as the extra speed made in the crowded streets results in the wagon freeing itself more rapidly from other heavy wagons and so not being pocketed and forced to go at a snail pace behind horse vehicles. Then, too, trouble was experienced in turning out and passing three-horse coal wagons, stone wagons and others that travel at a 3-mile-an-hour rate. Too much time was needed in increasing the speed to do the trick and often when the driver started to pass a wagon some other vehicles would get in the way before the plans were completed and the truck with its trailer had to adapt itself to the horse pace. This does not occur in suburban places as there the streets are not congested and the trailer can be used to great advantage. Some trouble has been experienced with the latter in close places in the yards where it is necessary to back for some distance between long piles of tile, telephone poles and other stores.

Last Saturday the MOTOR AGE man found the truck in the yards at the corner of Southport avenue and Clybourn place, on the banks of the north branch of the muddy Chicago river. Half a dozen employees of the telephone company were busy loading it with tile that had to be transported to the corner of Evanston and Cornelia avenues, a distance of $3\frac{1}{2}$ miles. The truck as it stood silent between the huge piles of tile at one side and the river not 2 feet from the front

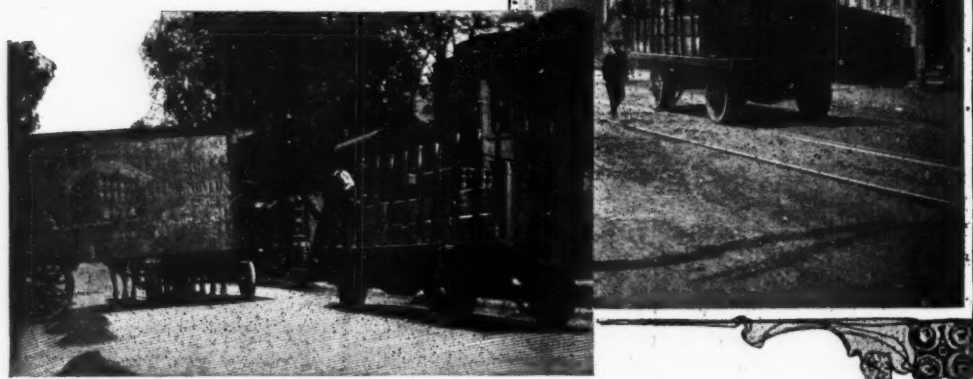
wheels at the other side looked the very picture of business. It resembled one of those big type of locomotives in the midst of a stone quarry hitched to its heavily loaded train of cars and looking the emblem of strength. During the few minutes of waiting until the tiles were all in place several other methods of transportation were at hand. On the river the lumber boats were being towed by puffing tugs that were filling the air with smoke, across the river was a small steam engine running a derrick for unloading coal from a barge, and it, too, was adding its share of pollution to the morning air, and behind the truck and across the drawbridge passed a passenger train which also did its part in dimming for a time the clear morning sunshine.

But the truck stood silent, and when moving off with its load did not add its quota of black smoke, and the noise occasioned by the throbbing of the motor was not perceptible a block away.

Comparisons between the gasoline motor and the steam one were crowding one upon the other; for the lumber boat a towing tug was needed and its course was restricted to the course of the river. The passenger train was useful so long as it remained on the lines of steel, but beyond that became an engine for its own destruction, but the truck was master of itself. Ahead of it was a devious path of earth and garbage waste, winding at one place between high piles of poles and at another overhanging the bank of the river. It was up grade and down, no level surface such as the river or railroad track, but its work was as successful as either the boat or train.

When the loaders had completed the load, which consisted of seventy-eight conduit tile 3 feet long, 16 inches wide and 10 inches deep, each weighing 153 pounds and making a total load of 6 tons and 90 pounds, not counting the several workers who traveled with it, the driver gave the motor a quarter crank, the pistons responded and in a second the truck was moving slowly over the soft ground. The speed along the river bank was a slow walk, not over 3 miles per hour, but at that rate the tiles jolted against each other because of the rough places, and made it necessary to slip the clutch a little at times.

The start was made at 11:10, and the course lay along Clybourn place, paved with partly rotted bricks. The truck followed the car tracks for three blocks, and, as often the blocks were rotted away at either side of the tracks, leaving holes 6 inches deep that the wheels had to drop into, it was necessary to go at not over 3 miles per hour. The pace seemed slow, and a coal merchant standing in front of his office nudged his head with a "none of that for me," but accepted



WHITING TRUCK IN SERVICE OF CHICAGO TELEPHONE CO.

an invitation to ride for a few blocks until the streets were smoother. In one place the blocks improved somewhat, enough to warrant the driver throwing in the intermediate speed, upon which the doubting Thomas coal merchant gripped the side of the seat and looked on in amazement while two of his two-horse wagons were passed within a block and one-half. But the pace was too fast for the tile, and one or more of them had chipped ends as a result of the speed.

On Orchard street asphalt pavement was met with and the high speed came in for use for the first time. On the smooth surface 12 miles an hour were made with ease and little jar to the tile, they not jarring nearly so much as when going 3 miles an hour on the street car track. At this merry clip two big three-horse furniture vans were overhauled and it slipped between the curb and another one that was loading on the opposite side of the street. The opening left, as can be seen in one of the illustrations, was small, and to the amateur it seemed as though the big truck might dash into the curb or take a wheel off the van. But neither occurred and the truck did not even have to slacken its top speed and made the opening with almost as much ease as a pleasure car.

Several blocks further up this street a turn was made onto Deming place to cross over to North Clark street, and on this pretty residential street a Fair furniture wagon was passed. It seemed a revolution of ordinary methods to see a big truck with a 6-ton load passing light wagons. But it was so, and the gasoline motor and rubber tires were responsible for it.

North Clark street is paved with brick, many of which are chipped and the other half worn away. When crossing such places the speed had to be lowered to a slow walk, as it had to be when crossing car tracks or street crossings, where flagstones are used for pedestrian use and, the dirt being scraped away from them, they remain 2 inches above the level of the roadway. To go fast over these places with such a truck and load would mean a shaking sufficient to put all of the tiles out of business and do much injury to the truck.

The remainder of the trip was along car tracks, and the run was made on the middle speed, which ranged around 3 miles an hour. Often this was too slow and often too fast, and it seemed a pity in vehicles of this sort that there is such a difference between the speeds. The forward speeds are $3\frac{1}{2}$, 8 and 15 miles per hour, and the reverse the same as the slow speed ahead. Greater elasticity can be had by using the clutch and varying the motor speed, but a more gradual graduation of speeds would be valuable. Such would mean greater weight in construction, but it would be small compared with the weight of the truck and its load.

On Evanston avenue, where the load was to be removed, the street being excavated at either sides of the track, it was imperative that the truck follow the rails closely. This was easy, though one wheel was slightly to the side. In places the dirt between the tracks sank several inches as the big 6-inch tires passed over it, but at no time, not even in reversing over soft soil, did the wheels fail to move the truck and its load along. The trip was completed at 12 o'clock noon, or exactly 30 minutes being needed for the

$3\frac{1}{2}$ miles, which time included several short stops for street cars and timid horses. Timid horses are less numerous than foolish drivers. Half of the horses left standing along the sidewalks did not have tie weights, and often when they set up an equine dance over the sidewalk the owner would appear and lay the whole blame on the truck, but in such cases stops were not made, the owner being left to meditate on the fact that he might as well try to resist the wash of the waves on the ocean beach as retard the progress of the motor commercial vehicle.

During the month of demonstration work many interesting trips have been made. One day the truck made three return trips from the yards at Southport and Clybourn to Sixty-first street and Lowe avenue, a distance of 9 miles, and making a total mileage of 34 for



for the lubricant, making a total of \$2.50 per day for fuel, or \$65 per month. It is impossible to arrive at a definite estimate as to the average cost of maintaining such a vehicle owing to the short time it has been in service, but the consumption of fuel given is a fair average of what it would be month in and month out for several years.

Since the test commenced four valves have been broken, but owing to the ease with which the broken ones can be removed and new ones installed not half an hour was needed for each replacement. The most serious break of the month occurred at the corner of State and Washington streets, in the very heart of the retail district, at 3 o'clock in the afternoon. The truck was making 8 miles an hour over a rough car track when the crank shaft broke and the load had to be deposited on the street and the truck towed to a garage. The break was owing to a nut coming off the connecting rod cap, permitting of the bearing coming loose. By 7 o'clock the following morning a new shaft was installed and the truck made its usual trips. No other troubles have occurred.

The working of this truck so far can be

THE COMMERCIAL MOTOR CAR HAS A VARIED CAREER IN CHICAGO

taken as a fair criterion as to the serviceability of the gasoline motor to very heavy teaming over all kinds of streets. The speed is not always double that of horse wagons doing the same work except when the pavement is good. At other times the truck could make faster speed, but it would be unwise because of the jolting and jarring to the load. With heavy loads it is not possible to go much faster than a walk, and in such cases the value of motor trucks lies in the much larger load that can be carried. The manipulation of them is easy, the front wheels being obedient to the steering wheel, more turns of which are needed to take a corner than with the pleasure car. Sudden stops are easy, provided the brakes are properly applied. Too sudden application of them locks the wheels and they skid along as a runner, but with a gradual application there is not any slipping and the truck is speedily stopped.

The effecting of repairs without taking the machine to some repair shop or garage, is a question that many practical owners of commercial vehicles are wrestling with. One owner was charged four times the value of a certain part for having it placed in position, which was not a difficult one. This condition is leading to the erection of small repair sheds where all average breaks can be corrected.

the day, the load each way being slightly over 6 tons. For horses to do this work would have required, at least six teams, a day's work for a team being 3 tons over a distance of 18 miles.

With the trailer attached 11 tons were hauled 2 miles in 50 minutes over macadam and brick pavement, and on other occasions the same load was drawn $1\frac{1}{2}$ miles in 30 minutes over cedar block pavement.

The truck works every day from 7 in the morning until 6 in the evening, consuming upwards of 20 gallons of gasoline daily if running steady, or having a consumption of 1 gallon for every 3 miles traveled. One gallon of lubricating oil is needed each day. Taking the cost of gasoline at 10 cents per gallon, a wholesale price, and the daily gasoline bill is \$2, and 50 cents must be added



COLUMBIA 5-TON ELECTRIC STAKE TRUCK

Beer Delivery a la Mode—The John Gund Brewing Co., of La Crosse, Wis., recently received a Rainier electric car to be used for the delivery of bottled beer.

Local Express Service—Three 16-horsepower Oldsmobile delivery cars are to be put into service this week by the Motor Express Co., of Saginaw, Mich. The cars will collect merchandise in the city and suburbs, and also make three deliveries daily, with an additional delivery on Saturday.

Old Friend Relieved—Two large passenger cars are being built in Chillicothe, O., for a company recently organized to establish an automobile service between that city and Brainbridge. During the last 50 years a hack line has been the only method of transportation between the two towns.

Stage Line Demonstration—During the past week the Knox Automobile Co. has been giving demonstrations of the utility of its bus wagons in the small towns adjacent to Philadelphia. Avondale, Pa.; West Grove, Pa., and Newark, Del., were among the towns invaded. At the last place the project of inaugurating an automobile stage line, to run to nearby towns, is being considered, and a commission has been appointed to investigate the matter.

Record of German Bus Line—The Speyer Motor Car Co., of Speyer, Germany, is using several large Daimler omnibuses to carry passengers, goods and mails from Speyer to various towns in the surrounding country. Last year 90,700 persons were carried over the eleven different routes operated by the company. Among these passengers 89,100 paid regular fares, 250 had mileage tickets, and 1,350 went at special rates or free. The total receipts were \$8,360.18 and the total expenses \$8,571.08, there being a loss of \$210.90 for the year. This deficit was princi-

pally due to the increase in the cost of gasoline, which increased the company's expenses by nearly \$750. The receipts from passengers were \$4,748.80 and from the postoffice department \$1,731. Of the expenses \$3,342.13 was for salaries to employees.

In Hilly Kansas City—A thirty-passenger observation motor car was recently shipped by the Chicago Commercial Auto Mfg. Co., of Harvey, Ill., to George Haag, of Kansas City, and is now being used daily all over the city, climbing grades of from 18 to 20 per cent.

New Columbia Trucks—The Electric Vehicle Co., of Hartford, Conn., has sold to Montgomery Ward & Co., of Chicago, and the Lemp Brewing Co., of St. Louis, 5-ton stake trucks of a capacity of 5 tons. Each has a carrying platform 17 feet 10 inches long and 6 feet wide, the driver's seat not being included in this, it being at the front with the space beneath it occupied by the controller and tool box. Heavy I-beam sections are used for the frame pieces, which are carried on semi-elliptic springs working in sliding blocks on the frame, the front end of the front ones being bolted to hangers. Artillery wheels 36 inches in diameter are fitted with 7-inch solid rubber tires in the rear and 6-inch ones in front. Current is furnished by forty-four cells of Exide battery carried beneath the platform. This battery gives a radius of 25 miles at an average speed of 6 miles per hour. The drive is through side chains from two motors carried from the frame. The motors are suspended in a bracket, which is pivoted on the frame and from which a radius rod runs to the rear axle, the rod maintaining the position of the

motor and being used to tighten the chains. Steering is by wheel on a vertical column, and the controller handle is at the side of the seat.

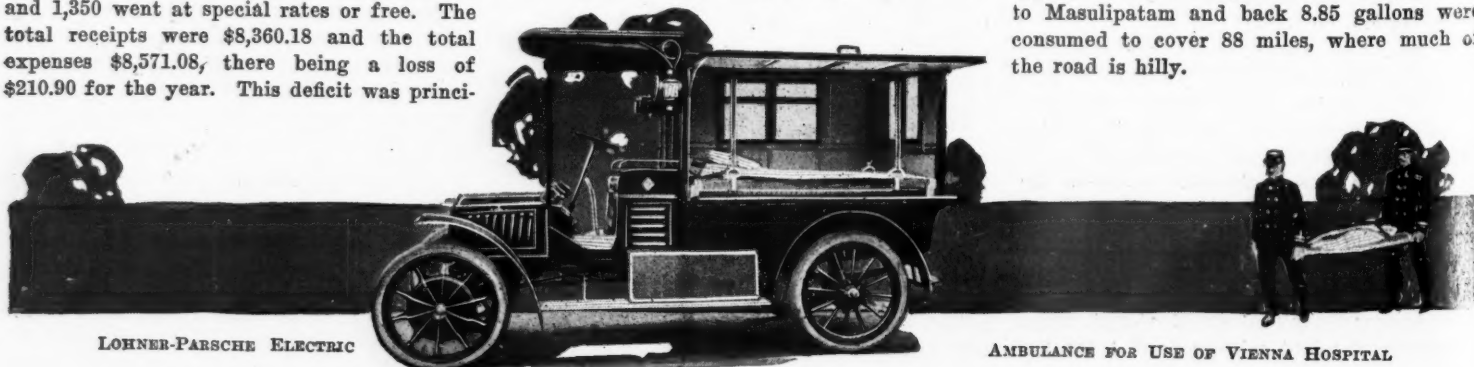
Motor Service in South—According to advice from Savannah, Ga., a company will soon be organized for the purpose of establishing an automobile service in that city and vicinity. A dozen cars are to be put into operation.

Oil Region Bus Line—An automobile omnibus and carriage line is being boomed for Bowling Green, O. It is proposed to install two carriages at first and add more as necessity demands. It is figured that automobile buses can be operated more cheaply than those drawn by horses and in addition give the traveling public much better accommodations. It is expected that the line will be in operation by fall.

Motor Buses for Summer Boarders—The project of establishing an automobile line between Chestertown and Tolchester Beach, and between Betterton and Still Pond, Md., has caused much discussion on account of the fact that stage coaches have been used there during the last 25 years. The country is thickly populated and thousands of people go there every year, especially to Tolchester Beach, which is one of the most important summer resorts of the state. Two motor buses, each carrying twelve or more passengers, are to be used on each route.

Western Stage Lines—A few days ago an automobile service between Roswell and Dexter, N. M., was started, and the 20 miles between the two towns covered in 1 hour and 8 minutes each way. A similar service will be established from Roswell to Torrance, a distance of 102 miles, and thus connect with the Rock Island, El Paso & Northeastern and Santa Fe railroads. In order to go to Albuquerque or to Santa Fe, N. M., it has been necessary to travel either by way of Trinidad, Col., or El Paso, Tex., a distance of from 500 to 600 miles in either case. By using the motor vehicle line to Torrance it is expected that nearly 36 hours in time will be gained in each trip.

Indian Passenger Line—An automobile line has been established in India between the cities of Bezwada and Masulipatam, the distance being 44 miles. Three eight-passenger Turner-Miesse steam omnibuses, with room for merchandise and mail, are used. The local postoffice grants a yearly subsidy of \$150. With the cars loaded the trip has been made several times in 2 hours 12 minutes, averaging 22½ miles an hour. Passengers are charged 90 cents for the trip one way and are allowed to take along 22 pounds of baggage free of charge. Kerosene fuel is used, costing 96 cents per 4.7 gallons. During the run to Masulipatam and back 8.85 gallons were consumed to cover 88 miles, where much of the road is hilly.



LOHNER-PARSCHÉ ELECTRIC

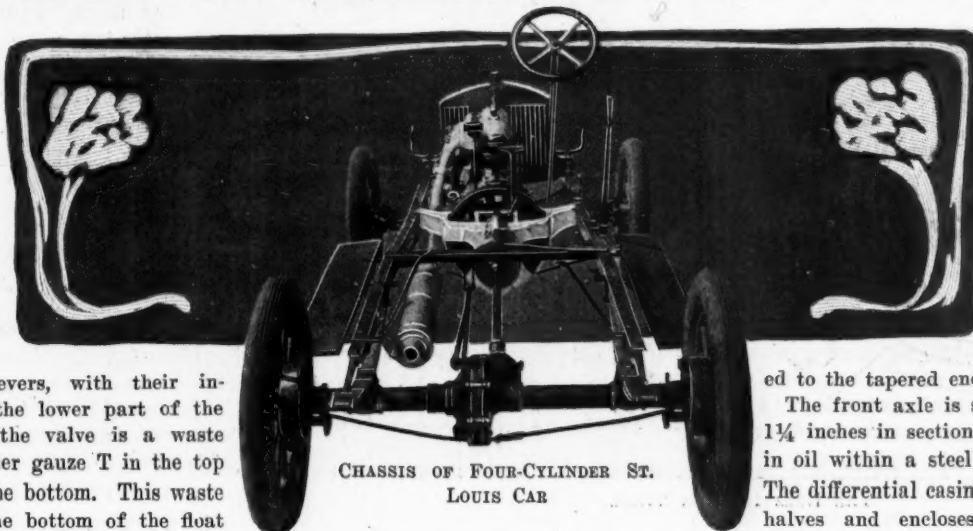
AMBULANCE FOR USE OF VIENNA HOSPITAL

THE FIELD OF AUTOMOBILE DEVELOPMENT

The King carburetor, manufactured by the American Magneto Co., of Bradford, Pa., uses a method of controlling the entrance of air different from that in others now on the market. The float A, loosely mounted on the stem of the needle valve, controls the entrance of gasoline by the two pivoted levers, with their inner ends embedded in the lower part of the valve stem. Beneath the valve is a waste chamber U with a strainer gauze T in the top and a drain cock V at the bottom. This waste chamber screws on to the bottom of the float chamber and can be removed when it is necessary to replace the gauze or take sediment out of it. From the float chamber the gasoline floats through a horizontal passage leading through the plate B, which forms the base of the main part of the carburetor. In the center of this plate is a short vertical pipe for containing the mushroom topped spraying plug C, which screws into it. Beneath this plug is another screw, which can be raised or lowered to regulate the flow of gasoline to the plug. Within C is a T-shaped opening D, and in the conical part of the mushroom head E are numerous grooves, through which the gasoline must be drawn before it is mixed with the air.

All air enters in the base of the carburetor through the elbow pipe M and rises through perforations in the plate B. Surrounding the spraying plug C is a thimble F with a circle of small openings G around the top and other openings in the top. To the top of the thimble is fastened a stem from the plunger H in a dash pot, the bottom of which projects into the head of the mixing chamber. The plunger is normally held in the bottom of its cylinder by the spring K, the tension of which can be varied by the screw L. The lower part of the mixing chamber is heated by exhaust passing through the jackets Q. The flow of mixture to the motor is regulated by the butterfly valve N and that of gasoline to the spraying plug can be increased by a priming screw, held by a coil spring, which by a short turn of the handle draws the arrowed head out of the pipe to the base of the spraying plug and allows the gasoline to flow through the passage in B, filling the space beneath C, at which time there will be enough ready gasoline to make a start. This priming device is different from that ordinarily used, but the maker claims it is perfectly satisfactory.

When the motor starts running air is drawn through M and, rising, enters the bottom of the thimble and, passing the grooves through which the gasoline is drawn by the motor suction, mixes with it and passes out of the thimble through the openings G in and around the top of it. As the motor speeds more air will be needed and the openings in the top of the thimble not being able to supply sufficiently, the increased motor suction raises the thimble against the tension of the spring K. As the thimble rises there is left around its base an annular opening P, through which air may pass, and through the chamber surrounding the thimble to the motor. While the air is following this passage the regular



CHASSIS OF FOUR-CYLINDER ST. LOUIS CAR

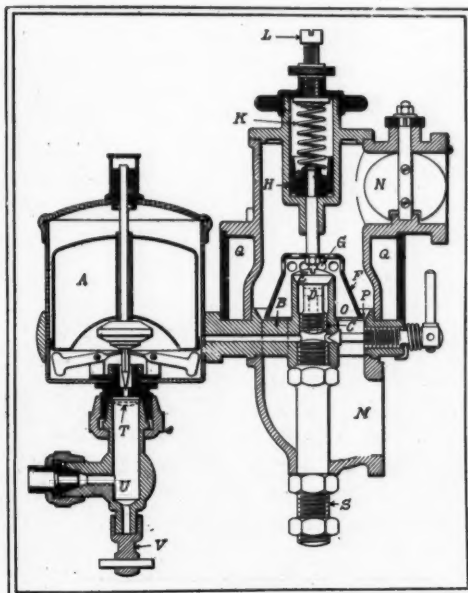
amount is passing through the thimble and carrying with it the vaporized gasoline. The advantage of this auxiliary air inlet is that at faster motor speeds additional air is admitted, while the quantity of gasoline admitted is not so increased as to give a mixture too rich in gasoline.

FOUR-CYLINDER ST. LOUIS

The integral casting of the motor crank case and the transmission gear case is the chief feature of individuality of the latest production of the St. Louis Motor Carriage Co., of St. Louis, a four-cylinder touring car.

The main frame is composed of two pieces of angle steel side pieces with an angle cross piece. The angle of the side pieces faces downwards and outwards, the top being 2 inches and the vertical flange $2\frac{1}{2}$ inches throughout. The side bars are bent to be closer together at the front, and are 28 inches apart at the widest part. The main angle iron cross pieces are bolted to the frame with the angle turned downwards and backwards, half way between the fly wheel and the rear end. This brace serves as the support of the under speed change lever. Four drop forged body loops are bolted to the frame.

The five-leaf front and the six-leaf rear semi-elliptical springs are attached in the usual manner. The front springs are 40 inches long with an arch $4\frac{1}{2}$ inches deep, while the rear springs are 42 inches long with an arch $6\frac{1}{2}$ inches deep.



THE KING CARBURETOR

Timken roller bearings are used throughout. The wood wheels of the artillery pattern, are 32 inches in diameter, and are regularly equipped with 4-inch G & J clincher tires. They run on the stub axles of taper steering knuckles in front, while in the rear they are key-

ed to the tapered ends of the axle.

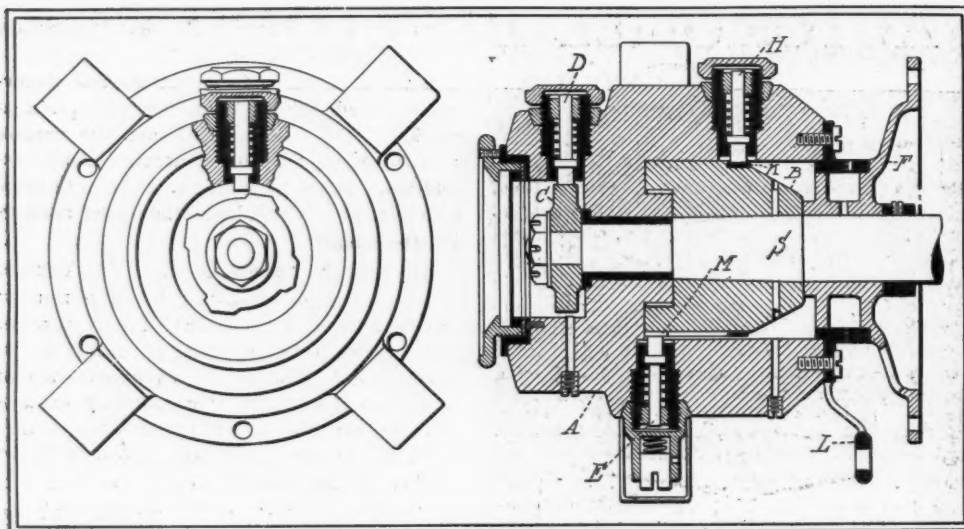
The front axle is solid and straight, $1\frac{3}{4}$ inches in section. The live rear axle runs in oil within a steel and bronze axle housing. The differential casing is of steel and is in two halves and encloses a Warner differential. Integral with the differential housing are sleeves for the forked torsion rod, the other end of which is secured to the main cross piece of the main frame.

The motor crank case and the transmission gear case are cast integrally to prevent misalignment and to save weight and expense. The water-cooled, vertical engine has four cylinders $4\frac{1}{4}$ inches in diameter by 5-inch stroke. At 1,100 revolutions it is said to develop 34 horsepower. It is hung from the main frame by means of arms from the crank case and by two $1\frac{1}{2}$ by $\frac{3}{8}$ -inch steel bands, passing under each extremity of the crank case and bolted to the main frame. The cylinders are attached to the crank case by twelve $\frac{5}{8}$ -inch steel studs. Two caps on each side of the crank case, held in place by brackets, provide the means of access to the case. Within the crank case and carried by it is a one-piece cam shaft for operating the valves. The drop forged crank shaft has bronze, ring-oiled bearings. The front bearing is $4\frac{1}{4}$ inches, the central bearing $3\frac{3}{8}$ inches and the rear bearing 5 inches. The 18-inch fly wheel is of 4-inch face and weighs 140 pounds. It is attached to the shaft by means of a bolted flange.

The pistons are $4\frac{1}{4}$ inches in diameter, 5 inches long and have 1-inch pins, bronzed bushed at their extremities. Three eccentric compression rings are used. Each piston, with rings and pins, weighs $3\frac{1}{2}$ pounds. The connecting rods are of drop-forged steel of the T-section pattern, with bronzed bushed caps. The connecting rods weigh $4\frac{1}{2}$ pounds each.

The combustion chambers are in the heads of the cylinders, in the crown of each of which is a small chamber, with the mechanically operated valves parallel on the same side of the cylinder and with the spark-plug placed vertically in the top. The valves are drop forged, with 45-degree ground seats. The heads are $1\frac{1}{4}$ inches and the stems $\frac{3}{8}$ inches in diameter. The valves are actuated in the regular manner from the two-to-one cam shaft and are interchangeable. When the corresponding plug is removed from the top of the cylinder, any valve may be lifted out.

The Continental carburetor is placed just underneath the exhaust pipe on the left and is connected by direct inlet pipes. The carburetor is controlled by throttle, without governor. Jump spark ignition is obtained through an Apple igniter, single Apple spark coil, Apple commutator and a Jewel spark plug. The igniter is bolted to the end cylinder and operated by friction drive from the chamfered



THE HERZ IGNITION TIMER

edge of the fly wheel. A set of five dry cells, placed under the front seat, is used for starting. The commutator is driven from the cam shaft by enclosed gears and a vertical shaft, giving it an elevation on a plane with the cylinder crowns.

The fuel is controlled by foot and the ignition by hand. The carbureter is throttled by a right pedal and the spark is advanced or retarded by means of a lever and with notched quadrant on the steering post.

The four-feed mechanical oiler is bolted to the right side of the cylinder and is actuated from the cam shaft. The feed-tubes run to the cylinders, the crank bearings being lubricated through the agency of a drain-trough bolted to the wall of the crank case.

Radiation is accomplished by a forced draught. The motor is fitted with a tight under-pan and covered with a tight hood. There is a fan formed in the fly wheel which sucks in the cool air through the spiral wound, fin-tubed radiator. The water circulates from the base of the radiator through 1¼-inch copper tubing to the double gear pump, direct driven from the two-to-one shaft. From the pump the water is forced into the base of the cylinders, thence to the cylinder heads and back to the water tank, which is integral with the radiator. The water tank and radiator have together a capacity of 3 gallons. The square gasoline tank of sheet copper, has a capacity of 15 gallons. It is placed directly under the front seat, on the driver's side.

The clutch is composed of two straight faced bronze disks held in place by three spring-operated dogs, between and also separated by cast iron disks. When the foot lever is applied the two bronze disks are gripped on both sides by the cast iron disks.

In the transmission gear case, the drive shaft bearings are 1¼ inches in diameter and 4 inches long. The counter shaft bearings are 3 inches long and 1 inch in diameter. A single lever on a notched segment at the right hand of the driver's seat slides the gears for forward and reverse speed changes. The reverse gives a 9¾ to 1 speed ratio, the low 6.9-7.6 to 1, the intermediate 4.8-19 to 1, and the high speed or direct drive 3 to 1. The gears are lubricated by a grease-filled case at the bottom of which there is a plug for cleaning. The driving connection with the differential is accomplished by a Spicer universal joint, propeller shaft and bevel gears.

The car is provided with two sets of inter-

nal brakes, one acting upon a drum on the universal joint, the other on the rear hub drums. Wooden shoes are used and they are operated by foot levers, one on either side of the wheel post. The general service brake on the universal joint is controlled by the same pedal that controls the clutch. Those on rear hubs are operated by a cable run over equalizing pulleys to the pedal ratchet.

The steering gear is of the rack and pinion construction, built on a 48-degree angle. It is provided with adjustable ball and socket joints throughout for taking up wear. The wheel post is solid, ¾-inch in diameter and covered by brass tubing. There is a separate post for the spark lever, also brass-encased.

A single exhaust pipe leads from the sides of the cylinders to the tubular muffler, which is suspended longitudinally from the left side of the main frame. It is provided with a cut-out, controlled by a button on the foot-board.

EUREKA SEPARATOR

The separation of water and other impurities from gasoline is accomplished in the Eureka separator by inserting a straining box in the gasoline pipe between the gasoline tank and the carbureter. This box, cylindrical in shape, is entered at the bottom by the supply pipe from the tank, the pipe projecting some distance above the bottom. From the top leads the pipe to the carbureter, the pipe extending some distance into the tank so that

a cushion of air can be used above the level of gasoline without danger of any of the air passing to the carbureter. Midway of the separator is a perforated partition for straining all gasoline. The separation of water is accomplished by the water settling to the bottom of the separator and being drained off through a drain cock in the bottom. The fact that the intake pipe from the tank extends above the bottom permits of the water settling and not being disturbed by the entering gasoline. The separator is made by the Eureka Separator Co., of Rockford, Ill.

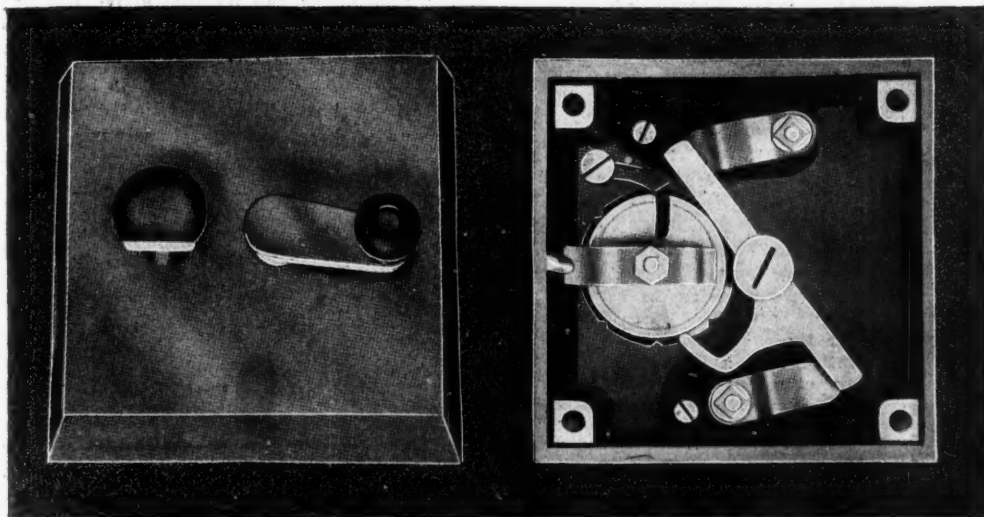
NEW HERZ TIMER

Herz & Co., of New York, have a new ignition timer for automobiles, which is used on the rear side of the dash and driven from the cam shaft by either chain or bevel gears. The timer is directly opposite in principle to many on the market, in that the two, three, four or six contact points, as the case may be, are on a revolving disk and the plunger, generally revolved on the shaft of the timer, is inserted in the body of the timer and does not revolve.

The driven shaft S is squared at the end, where it carries the hardened steel disk C, on which are two, three, four or six contact pieces, according to the number of cylinders in the engine. Into the main body of the timer, which is composed of insulating material A, is forced a brass bushing for carrying the plunger D at the front of the timer. The primary electric wire is connected to this plunger. Near the bottom of it is a collar held against a shoulder on the bushing by the coil spring. As the shaft S revolves the contact points on C touch the lower end of the plunger and complete the primary circuit. Further back in the insulating material A are five other plungers similar to the one D for distributing the secondary current. All of these are placed radially with respect to the shaft S, but four of them are in the same vertical plane and have wires from the spark plugs attached to them, and the other one, H, is nearer the rear and carries the wire from the coil. All are exact duplicates of D in construction. On the shaft S and within the stationary insulation A is a revolving insulation B, which is keyed to the shaft. On this insulation is a brass ring K beneath the plunger H and constantly in contact with it, and connected electrically with this ring is a



THE FOUR-CYLINDER ST. LOUIS CAR



THE COMBI-SWITCH LOCK

contact piece M placed in the path of the plungers, connected to the spark plugs. As the shaft revolves the piece M comes in contact with each of the spark plug plungers in turn, and the secondary current is thereby conducted to the proper plug as the primary circuit is closed by the cam and plunger at the front end of the device.

At the rear the stationary part is screwed to a collar, fitting over the outer end of the bracket F, by which the timer is attached to the dashboard. The spark is advanced or retarded by the lever L.

IGNITION SWITCH LOCK

The Combi-switch lock, manufactured by the Acorn Brass Mfg. Co., Chicago, is intended for locking a dash board automobile switch when the machine is left standing on the street or other places so that the switch cannot be turned on and the battery current used up. It is a combination lock, no key being needed, and can be set to over 2,000 different combinations. On the outer surface is a knurled screw head for effecting the combination and beside it the regular crank for turning the switch on and off. Within it are more complicated parts. At top and bottom are the wire terminals and between them a two-arm lever pivoted in the center for connecting the terminal. On one arm of this lever is a curved tooth for engagement with a slot in the combination wheel, which is in the central left part of the lock. The combination is of the click nature, the clicks being distinctly felt by the naked hand or through a glove. The combination can be set permanently or changed when desired. When connections are made the tooth occupies the slot in the wheel and to break the connection and lock it so, the lever arm is moved out of contact with the terminals, removing the tooth from the slot, and the wheel slightly turned.

MOTOR CAR LITERATURE

The Motor Maniacs is the title of a book by Lloyd Osbourne and published by the Bobbs-Merrill Co., of Indianapolis. It contains four stories of typical Osbourne humor and ingenuity and is a well accomplished car-burlesque of automobiling and love.

The latest production of J. Elmer Pratt, advertising manager of the Cadillac Automobile Co., of Detroit, is a booklet of poetry by Hal Reid, dealing with the subject of When the College Boy Came Home, which, more definitely, means his arrival on the farm with a Cadillac.

The Pneus is the name of the new house

organ of the Fisk Rubber Co., of Chicopee Falls, Mass. It is a bright, catchy affair of lots of short stuff and nothing to tire the reader.

The Moline Automobile Co., of East Moline, Ill., in its latest catalogue, describes its two models and illustrates them by several views of the cars and machinery parts. The reading matter treats of all mechanical features of both models.

The A. L. Dyke Automobile Supply Co., Olive and Walton streets, St. Louis, in its 1905 200-page catalogue, enumerates and illustrates all automobile accessories carried by it. The illustrations are exhaustive, in many cases sectional views as well as descriptions of the devices being given. Some space is given to a line of launches and other power boats carried and also to marine motors. Other features extensively treated are canopy tops, clothing, carbureters, electric apparatus and running gears and bodies.

The Motor Car Supply Co., 1427 Michigan avenue, Chicago, has just issued a catalogue that is decidedly different from the average supply house catalogue. It is of periodical size, with a heavy enameled cover and sixty pages of heavy paper devoted to the illustrating, describing and pricing of parts carried. Nearly all of the pages are arranged in three-column form, giving the book an organized appearance lacking in many such catalogues. The illustrations are well arranged on the pages, and this, coupled with a good selection of type, gives the pages an

attractive and exceptionally neat appearance.

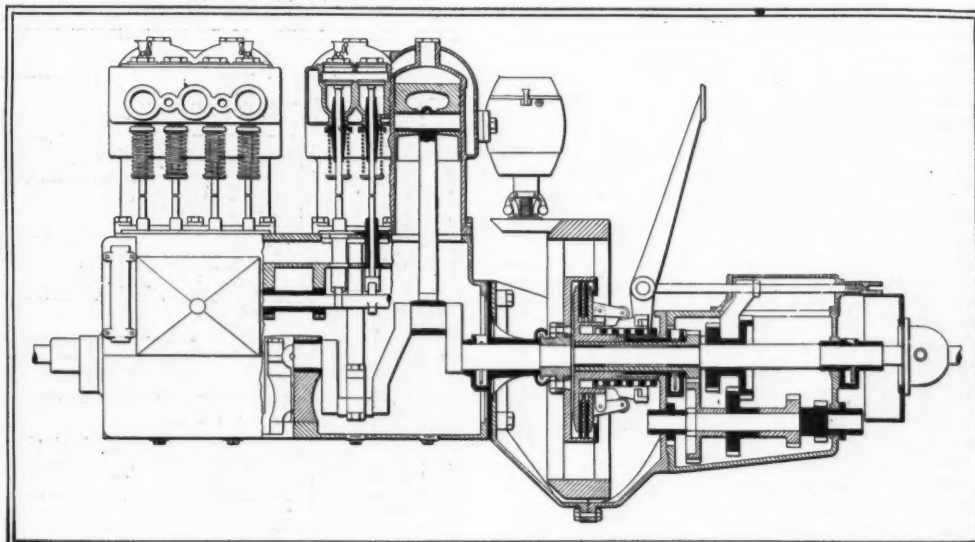
The Simmons Co., of St. Louis, has put out a little book through its automobile department called Who's Who, without quotation marks. "It is intended," says the preface, "to introduce St. Louis automobilists to one another, so that when you meet an automobile on the road you will know the owner from his license number."

The Chicago Automobile Club, 243 Michigan avenue, Chicago, is mailing to all prospective participants in the St. Paul rendezvous tour prospectuses with program of events in the Twin Cities. With each prospectus is an illustrated booklet of St. Paul, showing different parts of the city and maps of the best automobiling streets. This mail matter is accompanied by tour entry blanks for the tour.

The Morris Park Motor Racing Club, the headquarters of which are at 29 West Forty-second street, New York, is distributing a folder relative to the Morris park track, which has been turned over exclusively to automobile racing. Information about the club-house and grand stand accommodations, the nature of the track, and this year's program of races are given, together with views of the track and grand stand.

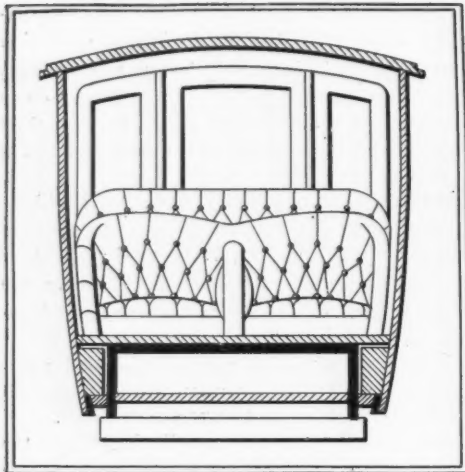
Charles the Chauffeur, published recently as a serial in the Sunday Magazine, a syndicate supplement used by several large daily papers, has been issued in book form by the Frederick A. Stokes Co., of New York. It is a clever yarn by S. E. Kiser, special writer for the Record-Herald, and deals with the career of Charles, a chauffeur with social as well as mechanical ability.

The Correspondence School of Automobile Engineering, of Akron, O., has recently issued a folder carefully explaining the purpose of the school, the ground of instruction covered and the method of instruction. From a study of the circular it is evident that the range of instruction is much greater than that of the ordinary automobile school as in existence at present, the courses having been arranged very similarly to those of a large correspondence school of mechanical and other lines of instruction. A person following a course from beginning to end would receive not only a broad knowledge of automobile principles and practice, but a good general knowledge of the mechanical and engineering subjects which relate directly or indirectly to the construction and operation of automobiles. The school is under the direct management of Victor Lougheed, editor of Motor.



SECTIONAL ELEVATION OF ST. LOUIS MOTOR AND TRANSMISSION

PATENTS OF THE WEEK



CALL'S DETACHABLE MOTOR CAR TOP

Letters patent No. 789,749, dated May 16; to Harry B. Maxwell, of Rome, N. Y.—This invention is a float feed carbureter with the usual style of float but a horizontal spraying nozzle entering the side of a vertical air tube, the point of the nozzle being in the center of the tube. Surrounding the nozzle is a rotary horizontal drum with the axle coincident with that of the nozzle. In the drum are inlet and outlet openings for the air, the inlet one being beneath the nozzle, and the outlet one directly opposite to it. On the axle of the drum is a handle for rotating it for varying the strength of the mixture. With the outlet hole directly above the inlet one the greatest amount of air is drawn and mixture admitted to the motor, but as these openings are gradually raised and lowered the air entering space is diminished, as is that admitting mixture to the cylinders. The handle of the drum is under hand or governor control.

Letters patent No. 789,780, dated May 16; to Charles O. Wyman, of Anoka, Minn.—In a chassis for automobiles the four wheels are drivers and the front two are not mounted on short axles carried on steering knuckles, but the whole axle rotating as in a horse-drawn vehicle. The motor is carried on the rear axle and drives to the rear wheels through bevel gears and chains. For front wheel drive a hollow reach is used, within which is a revolving shaft driven from the motor. The reach is pivoted at the front axle and the drive shaft has universal couplings with another short shaft, which is in reality a continuation of it and reaches to the front end of the frame, where it carries a bevel gear that drives a cross shaft, from which a chain drives to the front axle. The universal coupling being above the point of rotation of the front axle, it is possible to drive from the shaft within the reach to the short continuation of it when the wheels are at any angle for steering.

Letters patent No. 789,840, dated May 16; to James D. Colt, of Newton, Mass.—In an automobile running gear the inventor carries the machinery and body on semi-elliptic springs in the usual manner, but the seating for the springs, instead of being clipped to or pivoted upon the axles, are upon the tops of plungers that work in cylinder boxes beneath the axles. In the bottom of each cylinder box is a pneumatic cushion which can be inflated or deflated through a valve attachment. The lower end of the plunger rests upon the cushion, which acts as a pneumatic tire. The aim of the invention is to have the elasticity of a pneumatic cushioning in an automobile without having a pneumatic tire on the road wheels. With this cushioning device solid rubber tires may be used.

Letters patent No. 789,877, dated May 16; to David P. Perry, of Chicago, Ill.—In a storage battery for automobiles the inventor uses a relief valve in the head of each compartment of the battery for emitting gases that form. In the top of each compartment is a central opening with a bottle-like neck. Over the top of this neck is stretched a rubber diaphragm with a slight hole in the center, the hole being so small that when the rubber normally covers the neck the hole is closed, but when the rubber is stretched by form-

ing gases the hole becomes large enough for the gases to escape. The rubber is held in place by a screw cap that fits over the top of the neck, clamping the edges of the rubber between the top of the neck and it. In the center of this cap are small openings for the escaping gases to pass out.

Letters patent No. 790,248, dated May 16; to Charles H. Blomstrom, of Detroit, Mich.—The inventor in his muffler for an automobile engine uses a cylindrical metal casing divided into two compartments by a perforated partition midway between the ends of the casing. Through the axis of the casing runs a tubing which at one end receives the exhaust gases from the motor and at the other end projects some distance beyond the end of the muffler, where there is an elbowed end with a cut out provided. This tubing is perforated where it passes through the first compartment of the muffler, so that the entering gases pass into the first compartment and then through the perforated partition into the second compartment. Into the end of the second compartment is an exit pipe, through which the gases finally pass to the outer air. When the cutout is used the gases never enter either of the muffler compartments, but pass directly through the central pipe.

Letters patent No. 790,173, dated May 16; to Frank A. Biehn, of Chicago, Ill.—This invention relates to a device in connection with a float feed carbureter for lessening the amount of gasoline admitted to the motor when the speed of it increases. The float is in a separate chamber. The carbureter casing proper comprises an air chamber and a mixing chamber, the latter above the former and communicating with it through a connecting tube that reaches nearly to the top of the mixing chamber. In the bottom of this tube is the spraying nozzle through which the gasoline from the float chamber enters. The air from the air chamber flows through the connecting tube and past the nozzle, mixing thoroughly with the gasoline. In the top of the connecting tube is a conical plunger that partially fills the tube. This plunger has a vertical stem, which on its upper end carries an auxiliary air inlet valve. The passage to the motor leads from the mixing chamber near the top of the connecting tube. When the engine speeds the auxiliary air valve is drawn down by motor suction and more air admitted, but as the valve stem is drawn down it also forces the plunger down in the connecting tube above the nozzle and so partly obstructs this passage so that so much mixture of gasoline and air does not pass to the motor as when the engine is running slower. The faster the motor runs the more is the auxiliary valve opened and the lower is the plunger forced in the connecting tube, proportionally decreasing the flow of mixture, but at the same time allowing more pure air to enter.

Letters patent No. 789,995, dated May 16; to David C. McKan, of Nordhoff, Cal.—This invention is a spokeless road wheel for automobiles. The outer and inner halves of the wheel have on their

inner edges, near the rim, inwardly projecting lugs that are hooked for locking the two halves of the wheel together. In both halves the hub part and rim part are held together by a metal disk or plate. One-half of the wheel carries half of the rim and the entire hub and the other half carries half of the rim and a sleeve hub that fits within the hub carried on the other half of the wheel. In putting the two halves together the sleeve hub is first inserted in the hub of the other part and then the halves closed together until the lugs interlock, when both halves are rigidly united.

Letters patent No. 789,986, dated May 16; to Joseph Marsden, of San Francisco, Cal.—The invention is a detachable tread for pneumatic tires. The tread, made of rubber or canvas, covers the tread of the tire, its edges reaching half way to the rim of the wheel at each side. At short intervals the edges of the tread have attached to them in pairs short coil springs, which at their inner ends are secured to the spokes of the wheels. The tension of the springs is always sufficient to keep the tread in close contact with the tire. The attachment of the springs to the spokes of the wheel is swiveled so that the freest movement is given to them in order that the tread will always be contacting with the tire.

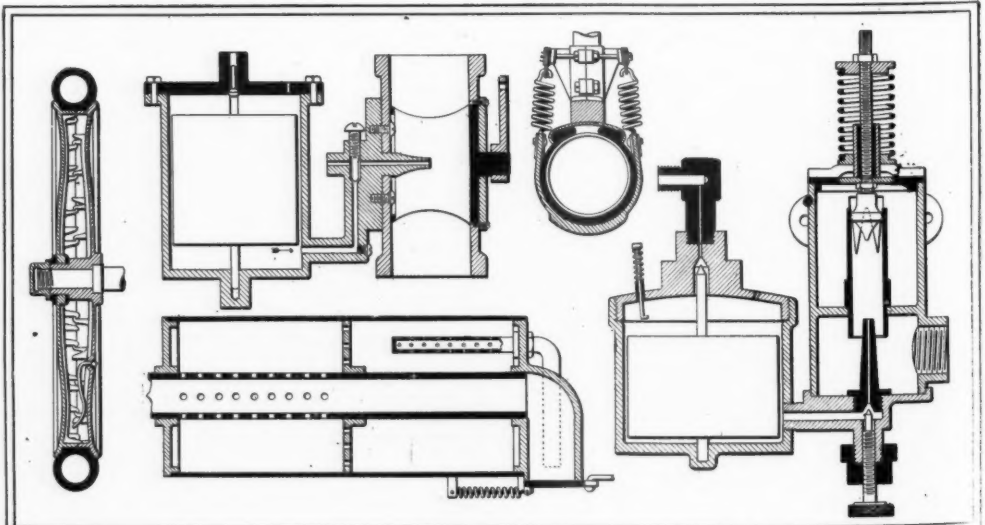
Letters patent No. 789,923, dated May 16; to Arthur H. Gossling, of Chicago, Ill.—In a force feed lubricator is a vertical cylindrical chamber and communicating with it two vertical plunger pumps with pistons driven through a walking beam action, the latter being operated by gearing or shaft from the crank or cam shaft of the motor. The pump cylinders have double check valves and can supply any number of oil leads to bearings.

Letters patent No. 789,910, dated May 16; to Christian C. Hill, of Chicago, Ill.—This invention is a differential gear for the rear axles of automobiles. The casing is divided in halves through the bearings and held together by bolts. Within the casing are four bevel gears and two spur gears and outside of it is a sprocket for chain drive from a jack or other shaft. On the end of each half of the axle section is a bevel gear that meshes with a similar gear carried on the end of obliquely-placed counter shafts. On the counter shafts are two spur gears constantly in mesh and through which the equalizing is effected. Between the ends of the axle sections and the short counter shafts are balls for taking up end thrust. Both counter shafts revolve in bearings in projections from the casing.

Letters patent No. 789,961, dated May 16; to Henry L. Call, of Chicago, Ill.—The invention is a detachable vehicle top for use on automobiles in cold or wet weather. It consists of side, top, front and end walls and an open bottom. The side and end walls fit over or outside of the body walls of the touring car, to which it has to be attached, and the top is supported by sills extending from the frame of the vehicle or any other method. Between the side walls of the car and those of the top are strips of pliable material that obstruct all air currents and so render the top practically weatherproof.

MAXWELL'S CARBURETER

MARSDEN'S DETACHABLE TIRE TREAD



MCKAN'S DISK WHEEL

BLOMSTROM'S MUFFLER

BIEHN'S CARBURETOR

CURRENT GOSSIP OF THE GARAGES



THE RAMBLER BRANCH AT BOSTON

Ford Among School Teachers—The Ford will be handled in Normal, Ill., by F. G. Iseminger.

Like Detroit Cars—Blaisdell Bros., of Rockford, Ill., agents for the Cadillac, have also secured the agency for the Buick.

The Right Kind—The York Automobile Garage will soon be completed in York Village, Me. Warren F. Blaisdell is the owner.

Extensive Tire Repairs—The Standard Automobile Co., of Pittsburg, has just completed a \$2,000 vulcanizing plant for the repair and re-covering of tires.

Her Majesty Among Miners—H. V. Hurlburt, agent for the Queen in Greeley, Col., reports good business and expects to sell at least a dozen cars this season.

Carolina Anyway—The latest addition to the garages in Atlantic City, N. J., is the Curcio Automobile Co., which has opened its place of business at 12 South North Carolina avenue.

To Loco Havana—The Locomobile Co. of America, of Bridgeport, Conn., has granted the sole agency for its cars in Cuba to G. Lopez, who has opened a garage at 132 Neptuno, Havana.

Community of Agents—Kelly & Bridgett, automobile dealers of Danville, Ill., have taken quarters in Robert Holmes & Bros.'s garage, on Hazel street, in which collectively the Franklin, Oldsmobile, Pope-Toledo, White and Winton are sold.

Rapid Steamer—E. O. Vestal, manager of the Keystone Automobile Co., of Pittsburg, made a record run from Pittsburg to Johnstown last week in a White steamer. The run was made in 4 hours 20 minutes, with five passengers in the car.

New Capital Rambler Agent—Frank C. Berens, president of the All-Around Washington Automobile Co., operating a line of sight-seeing cars in Washington, D. C., has embarked in the selling game, having secured the Rambler agency. He has established quarters at 521 Fourteenth street, and for the present will use a portion of the garage of the Washington Electric Vehicle Transportation Co.

Kick on Freight Rates—Pittsburg dealers are complaining loudly this year of the unreasonable freight rates on automobiles. The railroad companies charge for 8,000 pounds whether the shipment weighs that or not. Thus one dealer gets three cars from Buffalo to Pittsburg for \$51, while it costs him \$41 freight for a single 1,600-pound machine. As many times it is necessary or advisable to ship machines single this rule is unfair and costly to large shippers.

Specialize on Foreigners—Charles Muller, formerly of Paris, has opened a repair shop and garage in the rear of the building at 1710 Michigan avenue, Chicago. Albert Baud, George Perdrig and M. Clerc, also French mechanics and drivers, are associated with him. They will make a specialty of caring for imported cars. "There is a large number of French automobiles in Chicago," says Muller, "and I have learned that many owners want competent men to repair and otherwise take care of their cars. For this reason I have started in business. My associates and myself have all been employed in some of the best French and German automo-

bile factories and are able to do any kind of repair work."

Cadillacs To Rent—The City Cycle and Automobile Co., of Cortland, N. Y., has installed three Cadillacs to rent to the public.

Buick in New England—C. Spears, has been appointed agent for Buick cars in Manchester, N. H., with headquarters at the Manchester Auto garage.

More Garage Room Needed—The Highland Automobile Co., of Pittsburg, which handles the Autocar, will add one story to its new building in order to have the entire first floor free for a garage.

On Their Own Ground—Five lots located on Fifteenth street, between Troost and Virginia avenues, Kansas City, Mo., were recently purchased by the Missouri Valley Motor Co. for \$20,000, a garage having been recently built upon the site.

Shy on Large Cars—The demand for touring cars is decidedly the feature of the automobile trade in Pittsburg this year. Cars of from 20 to 60 horsepower have sold so much better this year than before that the local managers greatly underestimated their demand when placing orders last winter. W. N. Murray, president of the Standard Automobile Co., has been trying for weeks to get more Packards and Pope-Toledos but has failed. Banker Bros. have made big sales of heavy touring cars all



RECENT INCORPORATIONS

Toronto, Canada.—Nanon Automobile Co., capital \$20,000; to deal in automobiles and motor boats. Incorporators, Edward Armstrong, William Bullock and Elizabeth, A. G. and G. A. Ronan.

Rochester, N. Y.—Thompson-Schoeffel Co., capital \$40,000; to build motor cars. Incorporators, F. H. and G. B. Schoeffel and T. G. Thompson.

Pittsfield, Mass.—Central Automobile Station Co., capital \$15,000; to deal in automobiles. Incorporators, Harry Jeffrey and Louis Merchand.

Kansas City, Kan.—Missouri Valley Garage Co., capital \$2,000; to handle motor cars. Incorporators, Minfred Denton, P. P. and W. B. Doddridge and W. A. and E. E. Richter.

Columbus, O.—Columbus Auto Axle Mfg. Co., capital \$25,000; to manufacture parts and axles for automobiles. Incorporators, Clyde O. Haines Irvin H. Plenkhar, W. E. Campbell, James A. Kidwell and Charles S. M. Krumm.

New York, N. Y.—European Auto-Touring Co., capital \$125,000. Incorporators, C. A. MacHenry, J. M. and P. R. Cooke.

Camden, N. J.—Lubrication Packing Motor Co., capital \$100,000; to manufacture engines and parts. Incorporators, Gustav J. Scheffen, Jacob A. Leuthy, James B. Given and Frederick Ban-shelf.

New York, N. Y.—Post Mfg. Co., capital \$50,000; to manufacture automobile motors and tire protectors. Incorporators, Truman W. Post, T. Lewis Thomas and Roger F. Murray.



SALESROOM BOSTON RAMBLER BRANCH



REAR ENTRANCE BOSTON RAMBLER BRANCH

the year and have been obliged to pay premiums recently to get enough to satisfy their customers.

New Hampshire-Indiana Alliance—The agency for the Union car in Manchester, N. H., has been taken by Brooks & Brock.

Buggies and Buicks—E. Teel & Co., of Bedford, Mass., carriage and top makers, have made arrangements to handle the Buick in their city and vicinity.

Lewis Two Secretaries—Dai H. Lewis, secretary of the Automobile Club of Buffalo, has been chosen secretary of the Buffalo Automobile Trade Association, to succeed Charles W. Roe, who died recently.

Minneapolis Field Too Small—Walter C. Eger-ton has been appointed manager of the Denver branch of Winston & Walker, automobile dealers of Minneapolis, Minn., who intend to extend their business in other western states.

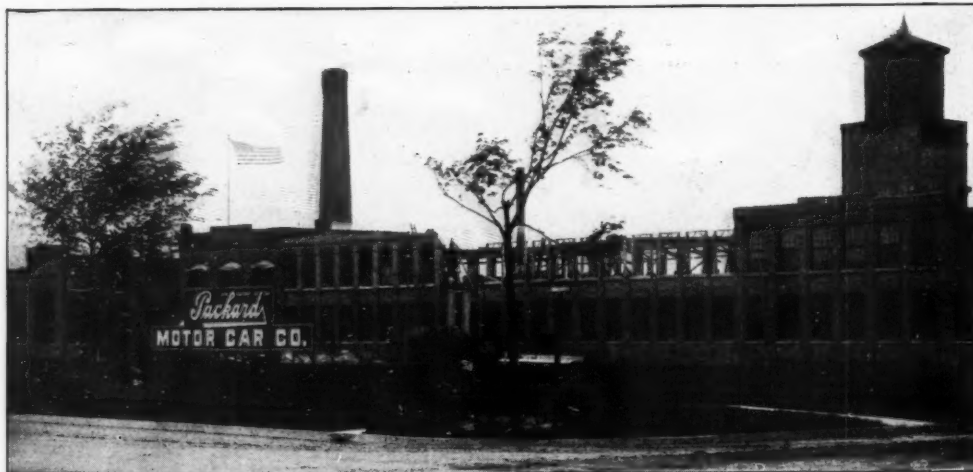
Just "Looked Around"—Thieves entered the plant of the Akron Automobile Co., of Akron, O., last week, but did not take anything. The local police department is, however, interested in the case and has started a rigid investigation.

New Englanders Await Deliveries—The dealers of Manchester, N. H., have sold more than seventy-five automobiles this season, excellent for a city of the population. Many of these cars have not yet been delivered and there is much disappointment, both among the dealers and customers, because factories are not able to make prompt deliveries. There are now probably 200 cars in town, among them being the Autocar, Apperson, Columbia, Buick, Grout, Jackson, Knox, Winton, Oldsmobile, Marion, Thomas Flyer, Pope-Tribune, Pope-Toledo, Pope-Hartford, Rambler, Stanley, Ford, Wayne, Orient, Peerless and Bayard-Clement.

Fugitive Agent Caught—A dispatch received at Syracuse from Akron, O., last week stated that M. C. Blackman, the fugitive automobile dealer of Syracuse, was under arrest there. Blackman disappeared from Syracuse about a month ago, ostensibly to sell a patent detachable automobile rim which he had invented. After he left it was found that he had sold the same automobile to three different persons and had received the money for it. Litigation is now going on to determine the ownership of the machine. He had also given too many mortgages on the same articles. His place at 346 South Warren street, Syracuse, was sold on foreclosure sale and closed up.

Monster Oyster—One of the largest garages in the east will be that now being erected for the Mar-Del Mobile Co., on Cathedral street, Baltimore. It will be a three-story structure, 110 by 170 feet. Part of the second floor will be used as club rooms by the Automobile Club of Maryland. The show room, office, ladies' waiting room and electric charging plant will be located on the main floor, while the repair department, washing and cleaning room for cars will be on the second floor. There will also be private offices and a lounging room on this floor, while a balcony will be provided for the convenience of club members and customers. There will be a private entrance on Cathedral street to the club rooms.

MANUFACTURERS' MISCELLANY



BUILDING AN ADDITION TO THE FACTORY OF THE PACKARD MOTOR CAR CO., OF DETROIT—THE THIRD ENLARGEMENT WITHIN THE LAST 6 MONTHS

Western Factory Increases—The plant of Caps Bros., of Kansas City, Mo., automobile manufacturers, is to be enlarged and the number of workmen increased.

Have Not Been Pierced—One of the Great Arrow demonstrating cars used by the George N. Pierce Co. in Buffalo has traveled 3,700 miles this year on one set of Goodrich-Bailey tires without a puncture.

Thomas Flyer Tires Afire—There was a small blaze in the basement of one of the buildings of the E. R. Thomas Motor Co., of Buffalo, last week. A large number of tires stored in that part of the building was damaged.

To Ratify Rubber Merger—There is to be a special meeting of the stockholders of the United States Rubber Co. to ratify the merger of the Rubber Goods Mfg. Co. with the former concern. The capital stock of the United States Rubber Co. is to be increased to \$70,000,000.

Moore With Hayden Eames—Hayden Eames, of Cleveland, selling agent of the New Garford Co., has appointed D. K. Moore, formerly with the Federal Mfg. Co., to take charge of western territory business, with the exception of that of Buffalo and Pittsburgh. Mr. Moore has his headquarters at Elyria, O.

Leggett Tangle in Court—Some of the incidents of promoting a company were told in municipal court at Syracuse the other day when the case of George A. Newman against John S. Leggett and G. Erwin DeLong was tried. Newman holds a claim against Leggett and DeLong, who started the J. S. Leggett Mfg. Co. The claim was assigned to him by Frank P. Costigan, who claims to have promoted the company. A peculiar feature of the trial was the appearance of Mr. DeLong on the stand as a witness for the plaintiff, when he was one of the defendants. It was claimed by Mr. Costigan that he was to have received \$500 when the new company was formed, and when Mr. Leggett should have received from the new company \$3,500 for the business he was seeking to sell to the concern. Costigan claims he received only \$185 for the work he did, and sues for the rest. DeLong and Costigan are now engaged in looking about for a site to manufacture automobiles at Auburn. They intend to lease or erect a plant. Mr. Leggett is now

manager of the Iroquois Motor Car Co., of Seneca Falls, N. Y., which grew out of the J. S. Leggett Co., formerly of Syracuse.

Heath in Charge of Advertising—Since the resignation of Percy F. Megargel, advertising manager of the E. R. Thomas Motor Co., of Buffalo, the duties of that department have fallen upon S. F. Heath.

Strike in Syracuse—Sixteen varnish rubbers at the H. H. Franklin Mfg. Co.'s factory in Syracuse struck last week for an increase in wages of from \$1.75 to \$2 a day. The difficulty was satisfactorily adjusted.

Mail Orders for Glides—The Bartholomew Co., of Peoria, Ill., recently received two mail orders for Glide cars, accompanied by certified checks for the full price of the cars. One order came from Salt Lake City, Utah, and the other from Montgomery Center, Vt.

Detroiters Increase Capital Stock—At a recent meeting of the directors of the Detroit Automobile Mfg. Co., of Detroit, it was decided to increase the capital stock of the company from \$25,000 to \$50,000 and to erect a new plant. The manufacture of cars will be increased.

New Factory for Toledo—William Van Wagner, of Toledo, is organizing a company to manufacture automobiles in that city. Plans are now being perfected for the formation of a company, which will be capitalized at \$100,000. Van Wagner was formerly superintendent of the Consolidated Mfg. Co.'s plant at Toledo, where the Yale is made, but has not been connected with that concern for some time.

Four-Wheel Mix-Up—Charles Cotta, of Rockford, Ill., some time ago entered into contract with the Four-Wheel Wagon Co., of Rockford, agreeing to give the company all the benefits of his patents and any improvements he might invent in return for being given all but ten shares in the company. After the company was duly organized for \$1,000,000, a factory built and manufacture commenced, it was discovered that one Hiram A. Franz, of Tamaqua, Pa., had already secured a patent similar to Cotta's. The Four-Wheel Wagon Co. and H. Theodore Hansen at once asked for and were granted an injunction bill restraining Cotta and others from disposing of certain patents. Hansen, who is an official of the company, declares that after he and others had placed implicit faith

in Cotta the latter had by stealth obtained information which allowed him an advantage over the company and had violated his contract.

Organizing in Elmira—It is possible that the Watrous Automobile Co., of Elmira, N. Y., will erect a plant in that city. Stock of the company is now being sold to local people.

Over Four a Minute—It is reported that the various plants of the Continental Caoutchouc & Gutta Percha Co., of Hanover, Germany, are in operation day and night and that 6,000 tires are turned out daily.

Still They Come—William H. Brown, 124 West Jackson boulevard, Chicago, manufacturer of dust deflectors, has appointed A. D. Kennedy Chicago sales representative. Mr. Kennedy is one of the oldtime cycle racing stars.

New Friction Driver—The first automobile built by the Aurora Carriage Top Co., of Aurora, Ill., was recently completed. The company is putting on the market a friction drive vehicle. Chicago men are said to be interested in the concern.

Parts Maker Reorganizes—The reorganization of Emmet P. Gray & Co., of Detroit, has recently taken place and the new concern is now the Gray Mfg. Co., with offices at 65 West Larned street. Differential gears, mufflers and other parts for automobiles are manufactured by the company, which will also place on the market a new signal whistle for cars and motor boats.

Strike in Reliance Factory—Two score of employees of the Reliance Automobile Co., of Detroit, went on a strike last week owing to the fact that a foreman in the engine department had been discharged by the superintendent. President De Witt Loomis stated that none of the strikers would be taken back. The men had made no complaint and struck because they did not like the new foreman.

Employees Grateful—J. Booker Ayres, assistant superintendent of the rolling mills of the National Tube Co., of Pittsburg, was last week presented with a Cadillac car by the 2,000 workmen under his jurisdiction. After George F. Ferrier, of Banker Bros., who negotiated the purchase, demonstrated to the delighted superintendent how the car was operated, a banquet was tendered Mr. Ayres by the employees.

Glides for Traveling Men—The Bartholomew Co., of Peoria, Ill., manufacturer of the Glide, recently shipped nine cars to representatives of the J. I. Case Threshing Machine Co., of Racine, Wis., who will use them in making trips through their respective territories in the west and northwest. The Racine concern had cars of various makes in experimental use last year in order to determine which would be the best suited for its agents in the country.

Chicagoan Buys Acme—The entire capital stock of the Acme Motor Car Co., of Reading, Pa., manufacturer of the Acme gasoline cars, has been bought by Frank A. Devlin & Co., of Chicago, the western Acme distributors. The deal is said to involve nearly \$500,000, and was completed a few days ago. Hereafter all the agencies of the Acme Motor Car Co. will become branches, and in several instances it is likely that the local headquarters will be enlarged.

FROM THE

Such Is Fame!—Former Mayor Peter Foley of Olean, N. Y., was the first victim of an order to enforce the 8-mile an hour automobile ordinance in Olean last week. Justice Cobb fined him \$15.

Blue Grass Y. M. C. A. School—The Young Men's Christian Association, of Covington, Ky., intends to open an automobile school. The local automobile club and the dealers have promised every possible assistance for the school.

Cheap Motor Education—An automobile course consisting of twelve lectures on the construction and operation of automobiles is to be given at the Manchester Municipal School of Technology, Manchester, England. Only \$2.50 will be charged for the course.

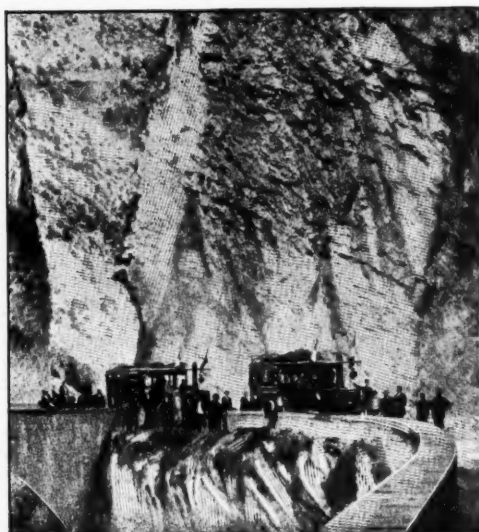
Wholesale Conversion—The mayor and aldermen of Hartford, Wis., were given an evening of automobile rides by the local owners a few days ago. The wives and children of the officials were also invited and it is now reported that no automobile ordinances will be passed in the little Wisconsin town so long as the present officials hold their jobs.

Staunch Steam Advocate—An English motorist has issued a challenge to any driver of a gasoline car which does not cost more than his steamer, \$800, for an endurance run of 100 miles daily for 20 days, the winner to be the one which shows the best average speed. Four persons are to be carried in each car. The expenses of the trial are to be paid by the loser. The steam car owner also proposes a side bet.

Census of Boulevardiers—According to an observer 118 automobiles and about 500 horse-drawn carriages passed through the Champs Elysee, Paris, within 30 minutes one day about a fortnight ago. During the succeeding 15 minutes eighty motor cars went by, among which were thirty-one four-cylinder cars, eighteen two-cylinder cars, ten single-cylinder cars, one three-cylinder car, nineteen electrics and one steamer.

New Country Run Road—Buffalo motorists are rejoicing over the practical completion of the macadam highway known as the Main street road from Buffalo to the county line. Of the 25 miles from the Buffalo city hall to the border of Erie county all except about a mile has been finished. This improvement makes a run to Batavia or Rochester much more delightful, as the new road is superior to the Genesee street road.

After Road Racers—The prosecutor of Camden county, Pennsylvania, last week appointed four officers, whose duty it shall be on Saturdays and Sundays throughout the summer and autumn to patrol that section of the Camden-Atlantic City route which runs through the county. They have been given instructions to see that the present state automobile laws are strictly adhered to by the many motorists who indulge in week-end journeys to and from the City-by-the-Sea. "No favorites are to be played," according to the prosecutor. Anyone offending is to suffer according to law, regardless of who or what he may be. No warnings are to be given, as was the case last year, but fines ranging from \$10 to \$50, according to the gravity of the offense, will be imposed for the first lapse, and board and lodging at the



AUTOMOBILE MOUNTAIN POST SERVICE IN ITALY

county's expense for 10 days will be the punishment dealt out for a second failure to live up to the laws.

Cordingly Sticks to Game—The next annual automobile show in Agricultural hall, London, will be held March 24 to 31. Cordingly & Co., the promoters, are ready to receive applications for space.

The Hero of Walla Walla—M. D. Walters and Frank Moore, of Walla Walla, Wash., recently drove home in a Franklin runabout from Spokane, covering the distance of 165 miles at an average speed of 17 miles an hour. This is one of the longest runs ever made by motorists of that section of the country.

Extensive European Tour—Edward V. Wilbern, of Cincinnati, is touring Europe. During the last 4 months he has been in France, Italy, Switzerland and Germany, covering more than 16,000 miles in a Hotchkiss car. He will tour Spain and Portugal, then go through the northern countries of Europe, and finally through Great Britain, before returning home.

Took One-Fortieth—A suit for \$10,000 damages was settled for \$250 in Ann Arbor, Mich., last week. The case was that of Eugene Helber, editor of the Washtenaw Post, and Professor E. A. Lyman, of the Ypsilanti Normal school. Last summer the professor while driving his automobile came into collision with the editor, who was riding his bicycle. Each claimed it was the other's fault.

Beat Horses at Stopping—Brake tests were recently made in Toulon, France, with horses and automobiles. When driven at 11 miles an hour an automobile stopped in 2¾ yards, while a horse needed 26 yards. When the speed was 13 miles the horse stopped in 20 yards and the motor car in 3 yards. At a speed of 20 miles an hour a motor car carrying four passenger stopped in 10 yards. Without passengers and going at 15 miles an hour the automobile stopped in 3 yards.

Woman Scorchers Shy Price of Speed—The Lower Merion, Pa., police did a land office business in hauling up automobilists last week. Fully a dozen were hauled in, among them a party of ladies who couldn't raise the necessary \$13.50 among them and were held 4 hours until their husbands came to the rescue. Another car bagged contained two young boys who live in the county. One of them paid the fine, and as the car rolled out of the magistrate's yard he was heard to remark

FOUR WINDS

to his companion: "Twenty-nine seconds! Gee whiz! I didn't think we could go a mile that fast!" He had been nabbed on a quarter-mile measured trap.

Cars To Carry Veterans—Every one of the thirty-four automobiles in Piqua, O., is to be used in the Memorial day parade in the Ohio town, carrying the old soldiers to and from the cemetery.

The Real Article—A butcher 14 years ago, C. S. Nelson, is now the leading citizen of Spooner, Wis., owning the Bank of Spooner, the general store and the only automobile in town, which he uses for making deliveries to farmers.

Toledoans to Tour Europe—General and Mrs. C. M. Spitzer, of Toledo, will embark from New York for a 3 months' tour of Europe. They will tour France in an automobile, also visiting Bavaria, Bohemia and Germany.

Touched the High Spots—A long and fast tour was recently completed in France by several motorists who drove a 24-horsepower Richard-Brasier through the eighty-seven French provinces, covering, all told, 5,228 miles in 9 days 3 hours 40 minutes of actual driving. The average speed was a little over 23 miles an hour.

Sheriff Tries Tire Shooting—Deputy Sheriff William Oldersworth, of St. Louis county, Missouri, is prone to demonstrate ill-feeling towards St. Louis motorists who come within his domain. Last Thursday afternoon, when out in his buggy serving papers, a motor car came up behind him. He hogged the road, and as the motorist passed him the car fenders struck his horse, which shied so that the sheriff was nearly dumped into the ditch. Oldersworth called to the driver, but he paid no attention, and the sheriff pulled his gun and fired at a rear tire to puncture it. His marksmanship failed.

Faithful Panhard—A French physician is still using daily a 3-horsepower Panhard & Levassor car, which was sold to him in January, 1896. The old car has the original V-shaped Daimler motor, and its owner claims that he has driven daily an average of 40 miles since he had had the car. "I never had to have the motor taken apart," said the doctor, "and I know its mechanism only from books and drawings. The only repair I ever made to the motor was to put in a new exhaust valve. This happened in 1903. The average speed of the oldtimer is 10 to 11 miles an hour and its maximum is 17 miles an hour."

Stole, Struck, Ducked—In a stolen car an unknown automobile thief had a brief but interesting career last Wednesday night in Buffalo, the car being wrecked and three persons hurt. Edwin Leslie, 202 Prospect avenue, has been keeping his touring car in a nearby barn. On Wednesday evening he went to a police station and reported that the machine had been stolen. While he was there a policeman came in with the report that an automobile had run into a street car on Main street. The car was Leslie's. The man who was driving it got away. Two women with him at the time of the collision were injured and another woman had been struck by the automobile just before it hit the street car.

AMERICAN MOTOR LEAGUE

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ISAAC B. POTTER, President,
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132 Nassau St., New York.
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32 Binford St., Boston.

National Headquarters
Vanderbilt Building New York



THIS LEAGUE

Is Now Collecting Route Information

covering all automobile routes in the important states and will publish road books for motor car users as fast as complete information is received. The A. M. L. is the only organization engaged in this work, and it invites the co-operation of all persons interested. For full information and membership blanks address American Motor League, Vanderbilt Building, New York City.

TO MOTOR AGE READERS

Many of you are not members of the American Motor League. You know little of the league and are too busy to send for the information you ought to have. The official page this week is therefore addressed to you.

The American Motor League is a national organization of automobilists. It represents the first systematic and successful attempt to organize the users, makers, dealers and friends of the motor car into a strong and useful body—one that will be strong enough to prevent the further adoption of unjust laws, and to secure the passage of sane and reasonable statutes in the different states.

PRESENT LEAGUE WORK

This is to enlarge the membership and to complete the formation of state divisions and local consulates throughout the United States. Its officers recognize the moral force of numbers, but in their effort to increase the league roll, they do not sacrifice character and quality to the attainment of mere bulk. The league includes in its membership, gentlemen of the highest social, professional, business and official standing, officers of both the civil and military branches of the national and state governments, and citizens of character in all parts of the union.

In each county, city and town the real work of the league—and all work that benefits automobilists locally—must be done by members who there reside. Provision is therefore made for league clubs, being automobile clubs which join the league in a body and take part in its affairs, and for boards of consuls, sometimes called consulates, which are formed of league members acting on special authority from the president. A board of consuls and a league club are, in most respects, substantially the same thing. Whether called by one title or the other, its relation to the league entitles it to receive back from the league a portion of the dues paid by all league members in the state; to elect one or more representatives to the state board of officers; to elect its own officers, adopt its own constitution and by-laws, maintain its own headquarters and manage its own affairs; to receive from the national and state officers of the league all publications and printed information prepared for the use and information of league members and local bodies; to direct and superintend the putting up of sign boards and caution signals to warn and guide tourists and travelers in the locality where the club or consulate is situated; to lead and direct the agitation of better roads

and streets in the home, city, town or county, and for the passage and maintenance of reasonable laws regulating the use of all vehicles on the public highway; to prepare maps and descriptions of all local routes and to send them to the national and state organizations to be incorporated in the books of routes and tours printed for the use of the league at large; to protect its own members against the operation of arbitrary, unreasonable, oppressive and unlawful acts, and to make such provision for their comfort, convenience, entertainment and social enjoyment as may be deemed proper; to maintain a proper communication with the national and state body of the league and with other clubs and consulates on subjects of mutual interest, and to send out information of general value for the benefit of all league members; to stimulate and direct the work of recruiting the membership of the league by inviting into its ranks all possible eligible and desiring persons.

ORGANIZING A CONSULATE

To organize a consulate is an easy and simple matter. Five members are enough to begin with, though the board will of course be stronger and more useful as its numbers increase. As soon as five members have been secured, or five who have agreed to become members, they should be called together to attend the first meeting. If the town or city contains a considerable number of automobilists the preliminary work will be made easier by selecting a few prominent and influential men who will act as a voluntary committee. This committee having signed a brief call inviting all others to meet at a convenient hour and place, the first important step will have been taken toward the forming of a board of consuls within the American Motor League. When the meeting is convened, elect a chairman and a secretary in the usual way, appoint a committee to prepare a constitution and by-laws for the consulate and direct the secretary to send the names and addresses of all present to the secretary of the A. M. L. as applicants for membership—excepting, of course, those who are already members—and as charter members of the new board. If the constitution and by-laws have been practically agreed upon before the meeting, they can be adopted at once, and officers of the consulate and representatives to the state board may be elected at the same meeting.

Each member of the board will receive from the secretary of the league a membership card and also a consul's certificate under the seal of the league. At the end of each quarter after the forming of the consulate, it will receive from the treasury of the league its due share of the funds received from all members of the state where the consulate is located. Local consulates and league clubs receive back from the league not only a share of the dues received from local organizations, but at least one-third paid by all the league members in the state.

LEAGUE CLUBS

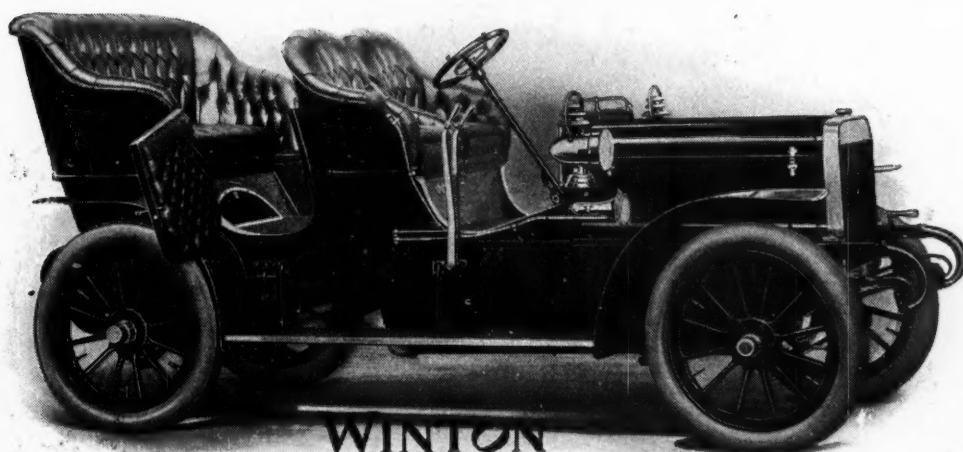
Any automobile club may become an A. M. L. club and thereby enjoy the same rights, privileges and benefits as are had by consulates, including a participation in the distribution of league funds. In every city and town where a club has been formed, the league observes a friendly comity toward the existing body and will take no steps toward the formation of a consulate until an earnest invitation has first been sent and its action taken upon the proposition to join forces for the common good. In the event that it is found necessary to form a separate A. M. L. consulate in such town the league policy will be at all times to encourage a friendly relationship and co-operation between the local bodies.

Any automobile club may become a league club by inserting in its constitution or by-laws a provision that each member of the club should be a member of the American Motor League. Each club member then receives his membership ticket in the A. M. L. and a consul's certificate. Under this arrangement it is not expected that membership dues shall be taken from the club treasury, but that each member of the local club shall pay his separate dues to the A. M. L. A club thus qualified is in all respects a consulate of the league and no board of consuls will be formed in any city or town which contains a league club, except upon the consent, request or recommendation of the club itself.

A printed form of constitution and by-laws will be sent by the secretary to any member or others who contemplate the forming of a board of consuls or a league club.

The secretary also asks for the name and address of every motor car user who believes that the purposes of the league as above outlined are worthy of support and who desires his name to be entered upon the membership roll.

WINTON



WHAT IS A CAR WORTH?

An automobile is worth only what the owner gets out of it in *satisfactory service*.

You may judge what the WINTON is worth from these statements made by business and professional men, who have paid their money for 1905 WINTON cars and are now giving them daily service:

I have used my Model C WINTON almost incessantly for about two months and with no trouble whatever.—Mr. John H. Gibson, Des Moines, Ia.

The air control is perfect.—Holmes & Childs, Williamsport, Pa.

The WINTON individual clutch system is the winning feature.—Mr. W. Evans Chipman, Philadelphia.

I can say little of the accessibility of the motor, not having had occasion in two months' use of the car to raise the hood. I like the WINTON system of simple control very much. My new car is doing such excellent service that I have turned out my four horses, preliminary to disposing of them altogether. I am giving the car hard service daily.—Dr. James Stotter, Cleveland.

It is the only tonneau that I know of that rides more comfortably than the front seat. This is, I believe, altogether in the WINTON spring suspension.—Mr. F. W. Baillie, Toronto.

I frequently drive through congested parts of the city without taking out the high speed clutch.—Mr. W. D. Sauters, Cleveland.

I have been taking most all the hills on the high speed, a performance I did not think possible.—Mr. W. E. Homer, Canton, O.

With my WINTON I take hills on the high speed that compelled me to use first speed on other cars I have owned.—Mr. E. R. Walker, Detroit.

WINTON users know what automobile excellence means because they enjoy it every day.

Five Models—16-20 to 40-50 H. P.—\$1800 to \$4500

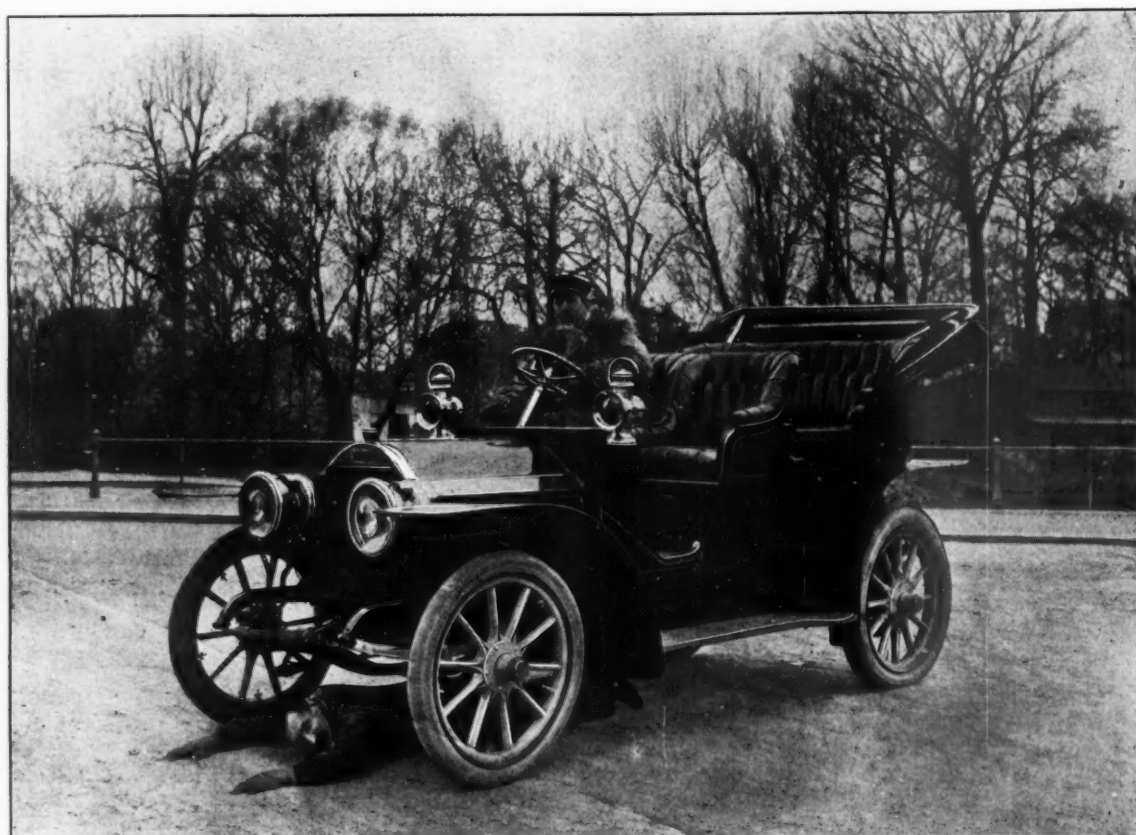
Catalogue No. 2 describes all models in detail.

THE WINTON MOTOR CARRIAGE CO.
CLEVELAND, Member A. L. A. M. **OHIO, U. S. A.**

Branches in New York, Chicago, Boston, Philadelphia and London. Sales Agencies Everywhere

DE DIETRICH CAR

THE ONLY FOREIGN CAR MADE
FOR AMERICAN ROADS



SEE THE CLEARANCE

20, 30, 40 HORSEPOWER

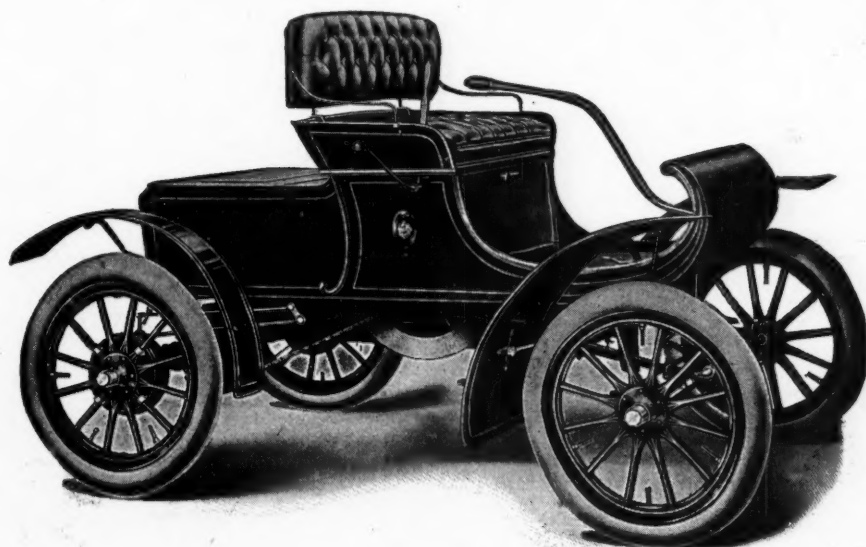
Demonstrations at any time

THE SPEEDIEST, STRONGEST,
MOST RELIABLE CAR IN THE MARKET

DE DIETRICH AMERICAN BRANCH: 215 W. 48TH STREET, NEW YORK

OLDSMOBILE

STANDARD RUNABOUT



Price \$650.

Its motor equipment has much to do with the continued achievements of the Oldsmobile Curved Dash Runabout. The single cylinder horizontal construction gives a simplicity and resultant satisfactory service which is appreciated alike by the beginner and the experienced autoist.

These machines have stood the test of more endurance contests than any other machine ever built. In 1903 a stock 4 1-2 horsepower Oldsmobile Runabout showed its capacity for transcontinental record breaking.

In 1905 its successor, the Oldsmobile 7 horsepower Runabout, was the unquestioned choice for the great transcontinental race from New York City to Portland, Oregon, for a prize of \$1000.

From New York to Chicago, the first stretch of the race, which is the only transcontinental trip ever undertaken from the Atlantic to the Pacific, seven days were required, or five days less than the St. Louis tourists of last summer, and this in spite of heavy rains and mud.

A machine that stands up under the exacting requirements of such a contest is a pretty safe proposition for everyday use. Thousands of purchasers have demonstrated the truth of this assertion.

Watch the race. Write us for full information regarding this or any other of our line of cars. Send for Catalog 52.

OLDS MOTOR WORKS

Detroit, U. S. A.

Member Association Licensed Automobile Manufacturers.



Don't experiment
Just buy a

FORD

Get a **Ford** demonstration of horse power in comparison with other cars and see the difference between actual power and rated power.



Canadian
trade supplied
by the Ford
Motor Co. of
Canada, Ltd.,
Walkerville,
Ont.

The "Blue Ribbon" Car

THE FORD was the first practical car with a double opposed motor to sell at a moderate price.

THE FORD was the first American made automobile to clip seconds off the mile record.

THE FORD was the first car built with a view to low cost of maintenance, and today is the cheapest car of its class to maintain.

THE FORD was the first automobile to be shipped in train lots to one dealer.

THE FORD was the first automobile popular enough to warrant the establishment of a factory in Canada.

There are lots of other FORD FIRSTS, but the first thing we would like you to do is to investigate the Ford proposition.

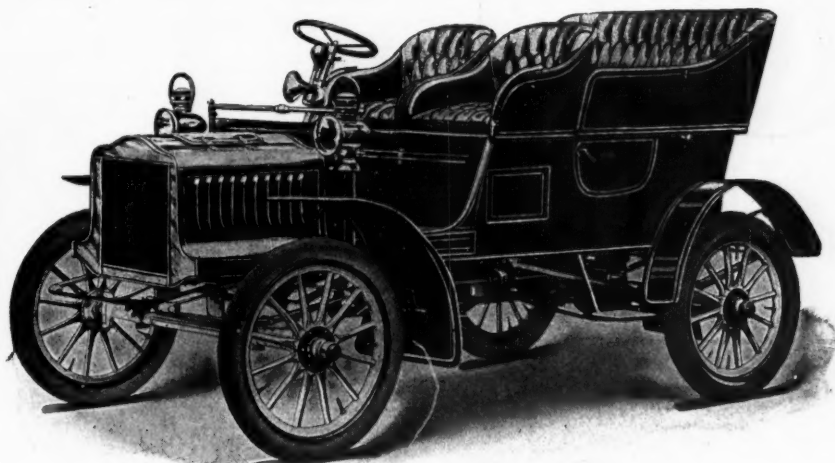
Write for our book on maintenance and get in touch with us.

FORD MOTOR CO., - Detroit, Mich.

Member American Motor Car Manufacturers' Association, Chicago.

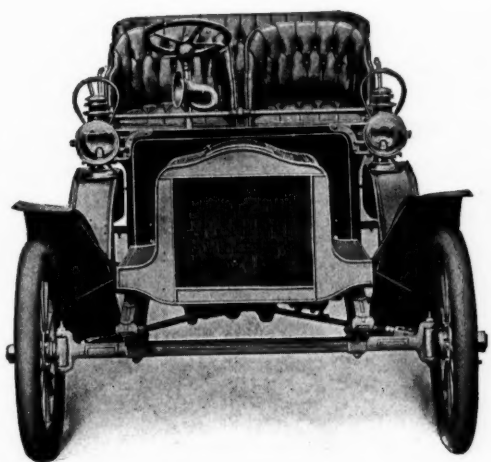
THE QUEEN

MODEL E
COMPLETE
\$1,000



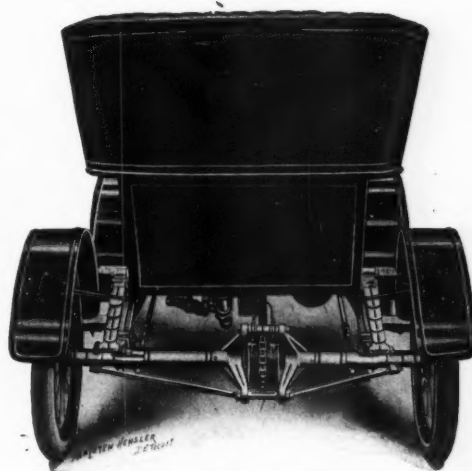
SEATS FIVE
DOUBLE
SIDE DOOR
TONNEAU

ALL SPEEDS ON ONE LEVER



We furnish Two Lamps and Horn

18 ACTUAL H. P.
TWO OPPOSED
CYLINDERS
1600 LBS.
3 to 40 MILES
PER HOUR



Finished in Royal Blue with Cream Running Gear

PRICE COMPLETE - \$1,000

AND WE CAN GUARANTEE

PROMPT DELIVERIES

Your Catalogue is waiting for your address

C. H. BLOMSTROM MOTOR CAR COMPANY : : : : DETROIT, MICH.

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BOSTON AGENT, F. E. Wing Motor Car Co., 66 Stanhope Street.
DENVER AGENT, Mathewson Automobile Co., 1420-22 Court Place.
PHILADELPHIA AGENT, The Motor Shop, 317-9 North Broad Street.

THE ROYAL TOURIST

"True Blue"



32-38 H. P.

GUARANTEED

2650 LBS.

\$4,000

Direct Flexible Shaft Drive—Free Driving Axle—Perfect Throttle Control
—Without Mechanical Governor—Positive Automatic Lubrication of Entire
Motor and Transmission—THE GREATEST H. P. FOR WEIGHT OF
CAR AND 5 PASSENGERS.

WRITE DEPT. 2 FOR CATALOG AND NEAREST AGENCY

ROYAL MOTOR CAR CO.

CLEVELAND, OHIO

GOODRICH Tires Won 7 OUT OF RACES 8 AT ST LOUIS May 7th 1905

"The Tire with a Record"

FIRST PLACE to the users of

GOODRICH CLINCHER TIRES

In Seven Out of Eight Events at the St. Louis Race Meet, May 7, 1905, means a preference of the greatest motorists for the tire which in a hundred races has proven itself the

Strongest and fastest of all

From outside tread to innermost fabric the Goodrich Tire is strain resisting.

Neither the speed of the race track nor the pounding of long, hard road runs separate the plys or tear off the tread.

Built as a unit, wears as a unit

THE B. F. GOODRICH COMPANY, Akron, Ohio

Boston, 161 Columbus Avenue
Buffalo, 731 Main Street
Chicago, 141 Lake Street

New York, 66-68 Reade Street and 1625 Broadway
Cleveland, 420 Superior Street
Denver, 1444 Curtis Street

Philadelphia, 909 Arch Street
Detroit, 90 East Congress Street
London, E. C., 7 Snow Hill





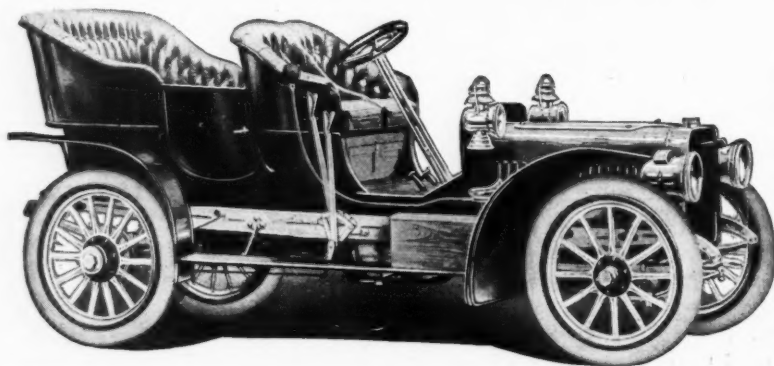
**A Big Comfortable
16 H.P. Car for
\$1250**

THE WAYNE

Model C (shown above) has a 90-inch wheel base, and long, easy riding, half elliptic springs. **This insures comfort.** Weight only 1600 lbs., and the double-opposed cylinders are 5x5. **This insures power.** The motor and fly wheel are hung *under* the chassis frame, making the center of gravity low, thus preventing skidding, and lengthening the life of the tires. **This insures economy.**

A year ago you couldn't buy the equal of Model "C" under \$2,000. It's the biggest value on the market to-day at \$1,250.

Model B is a four-cylinder (vertical) 24-28 H. P. car, 102-inch wheel base, sliding gear transmission, double side entrance tonneau, has fewer moving parts than any 4-cylinder car made.



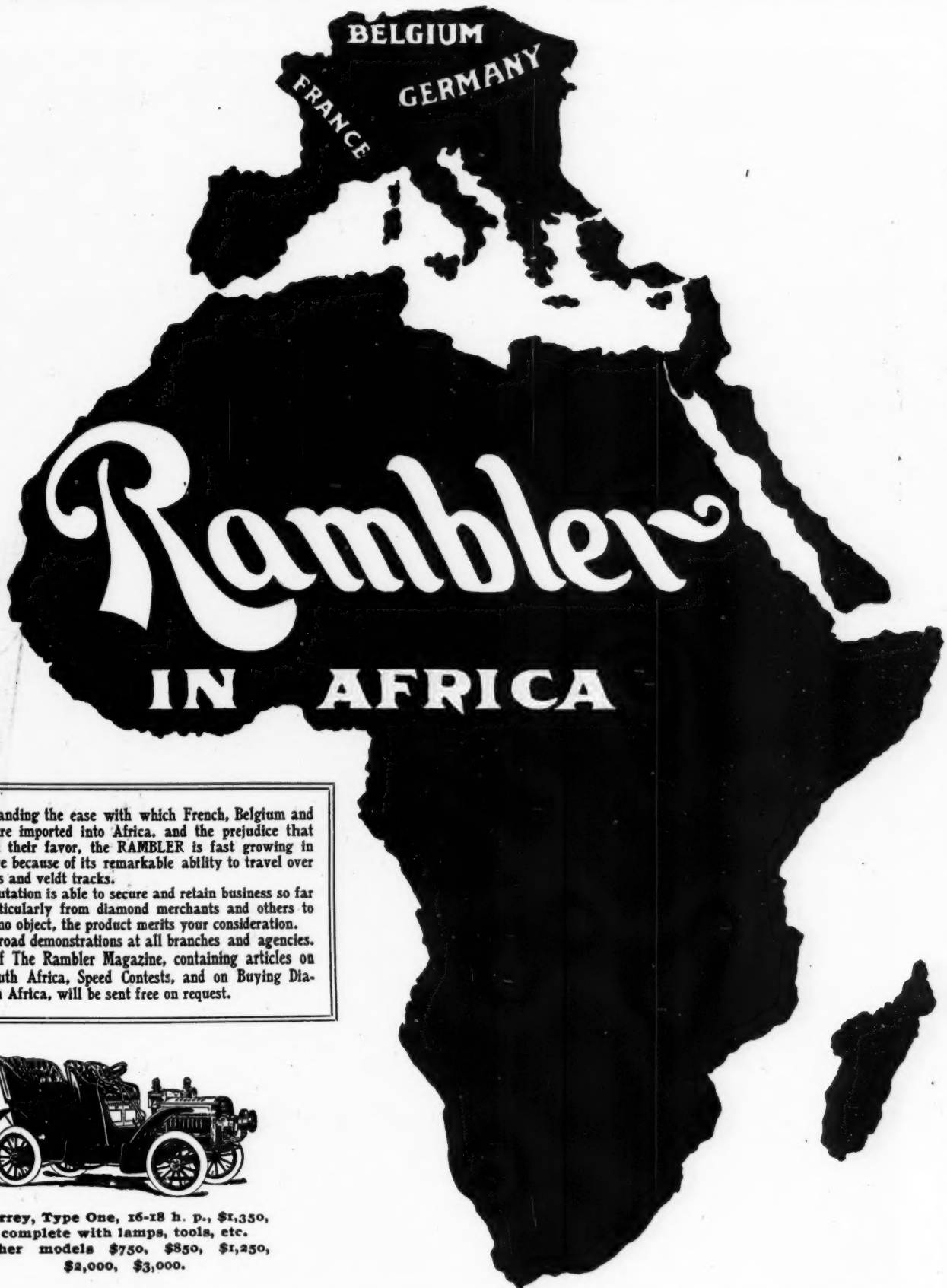
Price \$2,000

If you want to make agency arrangements which will insure satisfaction to both your customers and yourself, write us. We want the strongest men in the business to handle the Wayne, because it is a strong proposition.

Wayne Automobile Co.
Dept. H : : : Detroit, Mich.

Member American Motor Car Manufacturers' Association Chicago.

New York Agency:
Wayne Automobile Agency, 1659 Broadway

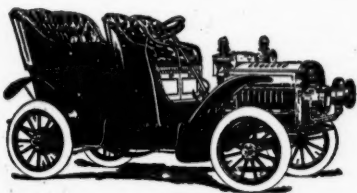


Notwithstanding the ease with which French, Belgium and German cars are imported into Africa, and the prejudice that long existed in their favor, the RAMBLER is fast growing in popularity there because of its remarkable ability to travel over the rough roads and veldt tracks.

If our reputation is able to secure and retain business so far away, and particularly from diamond merchants and others to whom price is no object, the product merits your consideration.

Practical road demonstrations at all branches and agencies.

A copy of The Rambler Magazine, containing articles on Kimberley, South Africa, Speed Contests, and on Buying Diamonds in South Africa, will be sent free on request.



Surrey, Type One, 16-18 h. p., \$1,350,
complete with lamps, tools, etc.
Other models \$750, \$850, \$1,250,
\$2,000, \$3,000.

Main Office and Factory

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Maker of the Finest Apparatus
In the World for

Electrical Ignition of Automobiles

Lacoste High Tension Magneto, (For jump-spark ignition)
Low Tension Magneto, Accumulators,
Induction Coils, Commutators,
Insulated Wire, Spark Plugs,
and many other Specialties.

Also Importer of

Zanardini Lamps,
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CONTINENTAL
MICHELIN.....
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TIRES

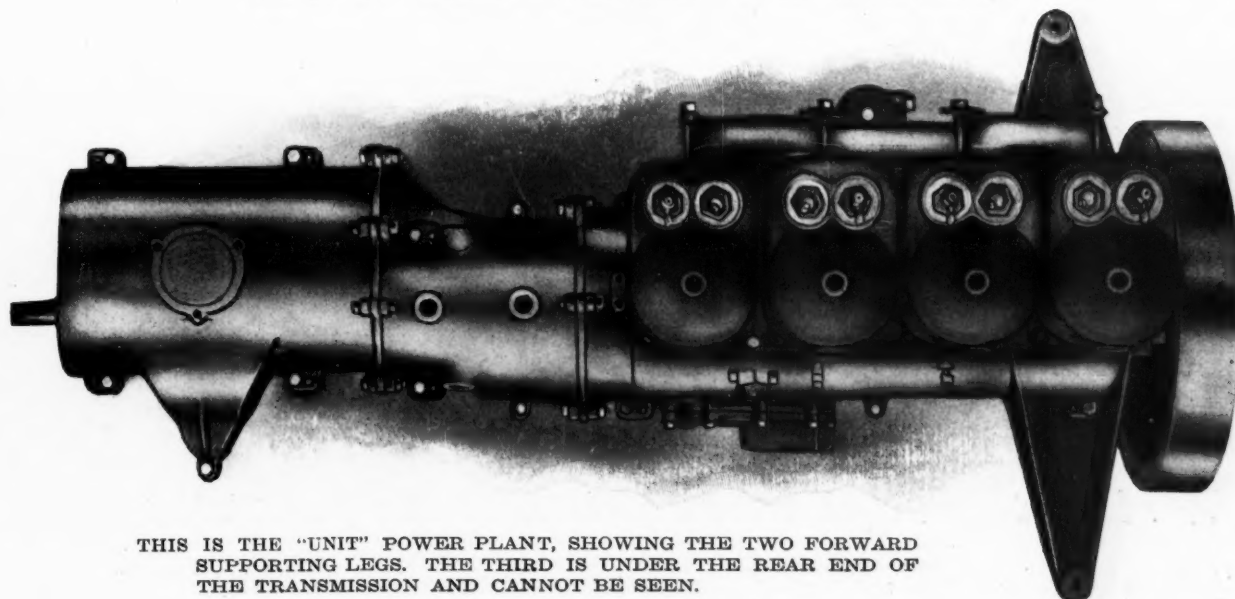


WHY WE DID IT.

The STEVENS-DURYEA name has been before the public four years and members of the Duryea family are the first authentic builders of gasoline cars in America, yet these names are among the last to be attached to a four cylinder car.

In looking over the four cylinder field we decided that there were plenty of costly cars, cheap cars, big cars, and fast cars, now on the market, and that if we attempted to compete solely on any of these classifications we would find ourselves in a crowd. It seemed to us that four cylinder cars were pretty much all alike except in size and price—that all seemed to be copied from the same pattern—that consistent accessibility was a farce—that real durability wasn't "among those present"—that the horsepower was getting kidnaped between the engine and the wheels, or else it wasn't there in the first place—at any rate it seemed to take about five horsepower in an automobile to do what one live horse could do.

It struck us that there was a chance to make a hit by producing a car that could do things without having its bonnet crammed full of engine—a car that would give a new meaning to the term "Accessibility"—a car that would compare passably with other mechanisms for durability—a car that would have less parts to twiddle and fuss with. We started on this hy-



THIS IS THE "UNIT" POWER PLANT, SHOWING THE TWO FORWARD SUPPORTING LEGS. THE THIRD IS UNDER THE REAR END OF THE TRANSMISSION AND CANNOT BE SEEN.

pothesis three years ago—we took plenty of time—we didn't hurry anybody, and here's what we've done. We've made a five passenger touring car weighing 1,650 sixteen-ounce pounds; with a 20 h. p. engine, that is miles faster than any similar car; that is a revelation in hill climbing; that is so accessible that neither you nor we can see room for improvement; that can run from one to two years without enough wear to require overhauling; that is the first really dust-proof car; that is so much simpler that it will make you smile when others talk about simplicity.

Now all this sounds like strong talk, but we mean it, every word of it and more besides. Good work and good material alone didn't and couldn't produce these results—it required brains, too. The new STEVENS-DURYEA is really a remarkable car—it has three improvements that are destined to be more far reaching in their effects on the automobile industry than is at first apparent. They are the "Unit Power Plant" supported on "Three Points," and a "Multiple Disc Clutch," which does *not* run in oil.

We have a booklet describing this Twentieth Century Hustler that is not a book of platitudes, it is a book of facts—chuck full of them.

J. STEVENS ARMS & TOOL COMPANY

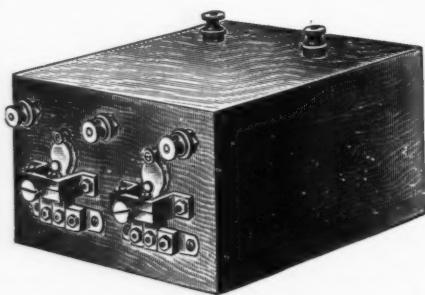
705 Main Street, Chicopee Falls, Mass.

Member Association Licensed Automobile Manufacturers.

A Splendid Achievement

was the establishing of the new
1,000 MILE RECORD

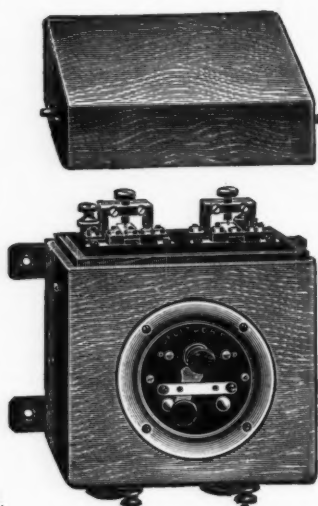
By MR. C. G. WRIDGWAY



No. 2 Standard Vibrating Coil



Ignition Cable



No. 2 Dash Coil with Switch



Commutator

Mr. Wridgway says in substance as follows:

"My decision to use a complete

SPLITDORF

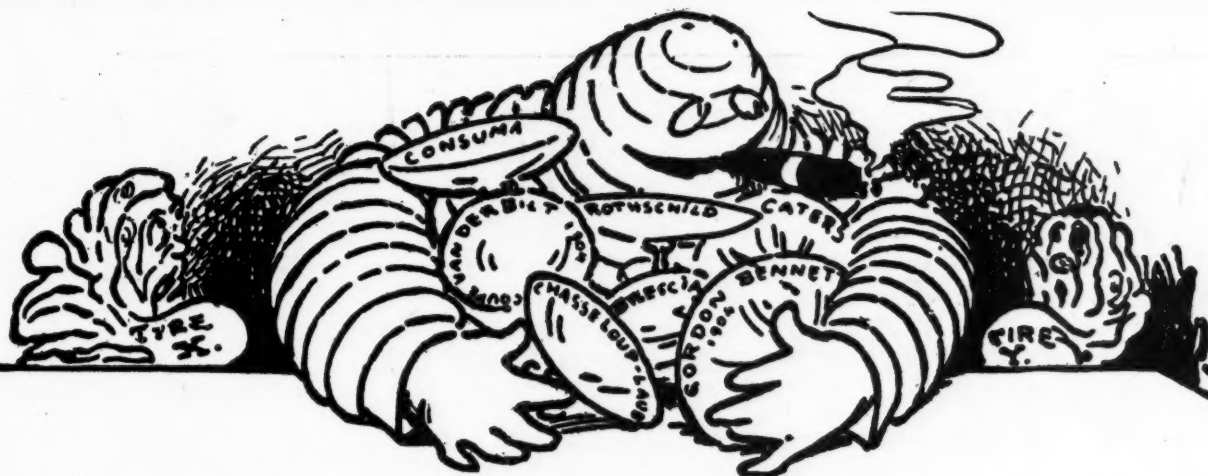
ignition outfit was fully repaid by the truly work performed by this apparatus. Its assistance was invaluable. I had no occasion to look at the coil—in fact, I didn't know I had a coil on my machine."

Could a higher tribute be paid?

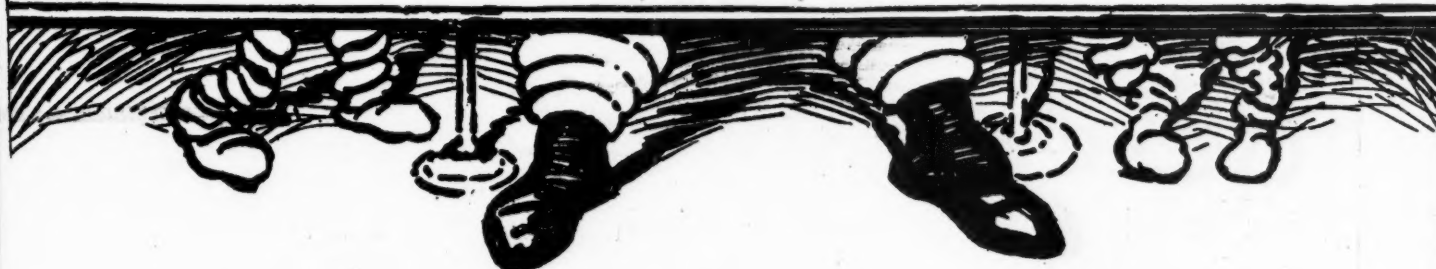
C. F. SPLITDORF

17-27 Vandewater Street

NEW YORK, N. Y.



All the Prizes Go to **MICHELIN** Now What Do You Say?



In every country where Automobiles
are run Michelin Tires take the Lead.

Victories in every important race
in 1904.

Mar. 31—Rothschild Cup (France)

April 1—De Caters Cup (France)

May 20—Chasseloup-Laubat Cup
(France)

June 17—Gordon Bennett Cup
(Germany)

July 1—St. Louis Non-Stop Run
(America)

Sept. 4—Cup of Italy (Italy)

Sept. 15—Consuma Cup (Italy)

Oct. 8—Vanderbilt Cup (America)

Nov. 24—Eagle Rock Hill Climb
(America)

Michelin Tires do not rim cut

Write for instruction book, free.

E. D. WINANS
General Manager

Telephone: 4657 Madison

MICHELIN TIRE AMERICAN AGENCY, INC.
6 West 29th Street, New York

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Still Another VICTORY!

... THE ...

Witherbee Storage Battery

was used in the PEERLESS Car driven by Charles G. Wridgway in his 1000-MILE NON-STOP record made at Brighton Beach on May 5th and 6th, reducing the former record by over four hours.

Over Two Million Consecutive Explosions, Without a Miss

Read Mr. Wridgway's endorsement of our Battery and profit by his experience:

THE PEERLESS MOTOR CAR COMPANY
OF NEW YORK

New York, May 8, 1905.

Witherbee Igniter Company, 26 Thames St., City.

GENTLEMEN: I wish to express my entire satisfaction with the Witherbee Storage Battery Igniter, as used by me in the thousand mile contest at Brighton Beach on Friday and Saturday, May 5th and 6th, and congratulate you upon being able to produce a battery that is entirely satisfactory under the severest of tests; it did not miss one explosion during the whole run and the entire performance of the battery was most wonderful.

Yours truly,

(Signed) C. G. WRIDGWAY, Gen'l Mgr.

PEERLESS MOTOR CAR CO. OF NEW YORK.

USED ON THE FOLLOWING CARS:

PEERLESS
POPE-TOLEDO
CADILLAC
APPERSON
CORBIN
BATES

FRANKLIN
PACKARD
PIERCE
BUFFUM
THOMAS
MARION

SMITH & MABLEY
HAYNES-APPERSON
MARMON
LOCOMOBILE
YALE
WELCH

For sale by the leading Jobbers

WITHERBEE IGNITER CO., 26 Thames Street
NEW YORK



'Buy the Battery with the Bee'

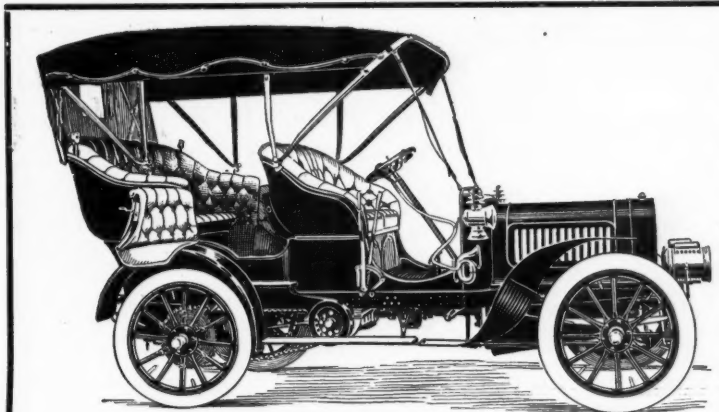
YOU KNOW

The Meaning of That Name

"Pope-Toledo"

Whether it be this year's, last year's or next year's model. The value of that name is just the same. "Pope-Toledo" has ever been synonymous for highest grade in material, construction and sterling worth.

We have on hand
**SEVERAL
SLIGHTLY
USED
CARS
OF**



30 H. P. POPE-TOLEDO—1905 MODEL.

THIS FAMOUS MAKE AT HALF PRICE

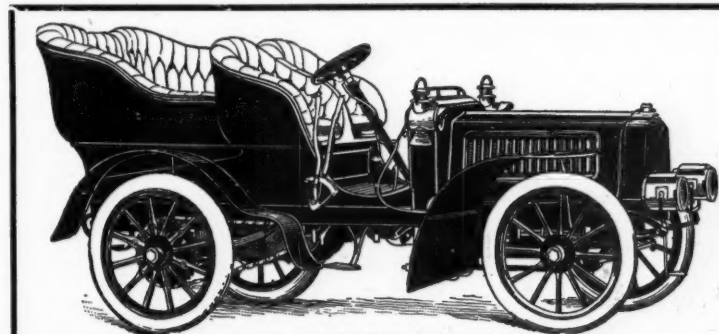
The original list price on these cars ranged at from \$3750 to \$4000, but because of the fact that they are not, strictly speaking, "brand new," we offer them at an average reduction of one-half.

"Pope-Toledo"

THEY ARE WITHOUT EXCEPTION IN A1 CONDITION, POSITIVELY AS GOOD AS NEW AND WITHOUT FLAW OF ANY KIND

You might buy a new car and, after using two or three weeks, could not discern the difference between it at \$3500 and any one of these special offerings at \$1750 or \$2250.

These cars have rear entrance tonneaus, some have cape cart extension top, some have canopy top, some have semi-limousine body and some are just straight touring cars, but without exception all the dependability and value is there, and anybody who buys either one of these specials will find himself possessed of a genuine bargain. Our word for that. We guarantee these cars to be as good as any new car of the same name and year, and our guarantee is as safe as a government bond.



24-30 H. P. POPE-TOLEDO—1904 MODEL.

These cars have been thoroughly overhauled, repainted and look like new. Complete equipment of lamps, searchlight, tail lamp and entire set of tools with each car, ready in every particular for touring. The cuts in this adv. show the principal difference between the 1904 and 1905 Pope-Toledo.

Call at either of our big stores or write for such further particulars as you may desire, but **DON'T DELAY**, for these cars will go quickly at the price.

ORLANDO F. WEBER CO.

CHICAGO: 1322-24-26 Michigan Ave.

MILWAUKEE: 321-23-25 Fourth St.

The name COLUMBIA is a synonym of leadership and the maximum of merit in automobile construction. The element of chance does not enter into the purchase of a COLUMBIA. Each model stands for known quantities and the highest qualities

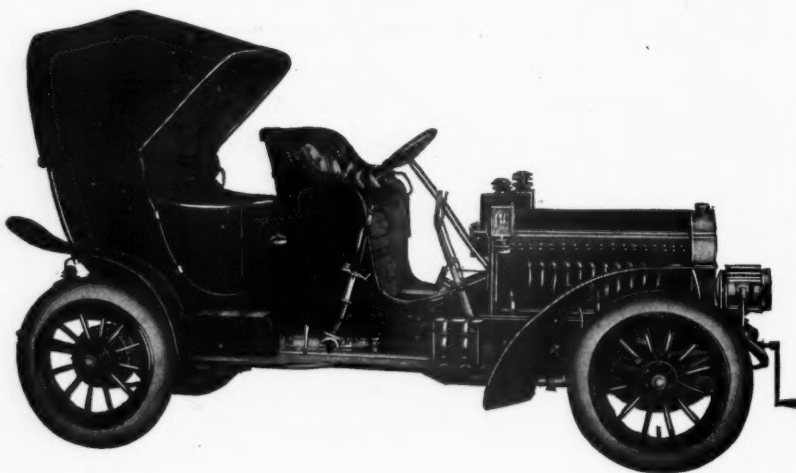
Columbia

35-40 h. p. **CARS**
and 18 h. p.

are America's most representative automobiles in the gasoline class. They are built for practical work, and claims for their superiority are not based upon the performance of specially constructed racing machines.

COLUMBIA ELECTRIC CARRIAGES provide the most convenient, luxurious and the safest conveyance for town service.

COLUMBIA COMMERCIAL VEHICLES cover the whole range of business motoring, from light delivery to the heaviest trucking.



A special catalogue is issued for each of the three COLUMBIA classes. Sent to any address on request.

ELECTRIC VEHICLE CO., Hartford, Conn.

NEW YORK
134-136-138 West 39th St.

Member Association Licensed Automobile Manufacturers
BOSTON: 74-76-78 Stanhope Street

CHICAGO
1413 Michigan Avenue

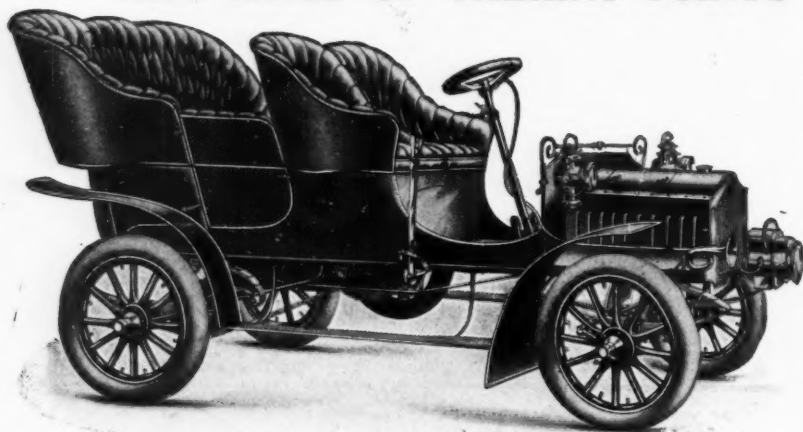
The Powerful DOLSON

The Strongest Car in
America at the Price

\$1350

COMPLETELY EQUIPPED
AND READY FOR
EXTENDED TOURING

ALL KINDS OF TALKING POINTS AND REAL MERIT



The DOLSON is the strongest, most powerful car in America for its price. It is a hill climber par excellence, has plenty of speed, easy of control, beautifully designed, handsomely finished and upholstered. Wheel base, 90 inches. Wheels, 30 inches. Tires, 3 1/2 inches front, 4 inches rear. Large, roomy tonneau, seating five persons comfortably.

In design, material, workmanship and specifications, the DOLSON compares favorably with high-priced cars, and it is listed at a price that enables agents to sell quickly and duplicate orders. We can and will make deliveries as specified.

Don't wait too long. Get in line now.
Write for further particulars.

1905 MODEL C. Price, \$1350.00

Including two oil side lamps, acetylene head light, French horn, mats, full tool equipment, ready for extended touring.

JOHN L. DOLSON & SONS, : **Charlotte, Michigan**

Chicago Agency: R. C. ST. HENRY, 1608-1610 Michigan Ave.

Northern

*If you are in a hurry,
Wire your order.
We will ship it today.*

THE TRUNNION BODY HANGER

A successful and original Northern invention. Enables you to get the fullest comfort, the most complete enjoyment, from your machine.

This patented feature cannot be had on any other machine. The Northern Runabout body is suspended from pivotal hangers under the center of each side, and is held on a horizontal plane by the front steering spring. This unique method of supporting the body is the only successful one for entirely eliminating the vibration from motor and running gear.

In comfort, in durability, in speed and in strength, the Northern stands supreme among Runabouts.

7 h. p. Motor, and every bit of rated speed is there. Motor starts from the seat. Safety device prevents back kick. One lever controls all speeds—two forward and one reverse.

The Sturdy Northern is worth \$100 more than any other Runabout of its class. We sell it for \$650.



**The Sturdy Northern Runabout
7 h. p., \$650.**

Price includes a pair of finest brass oil lamps, imported horn, extra spark plug, tire pump and repair kit, tool holder and tools for making roadside adjustments.

NORTHERN MANUFACTURING CO.

PETER FOGARTY, New York City Agent
142 West 38th Street

DETROIT, U. S. A.

Member A. L. A. M.

TICKLED THE CHIEF

**READ
THIS
LETTER.**

CHARLES E. SWINGLEY, Chief

ROBERT C. JENES, Sec'y

City of St. Louis
FIRE DEPARTMENT
CHIEF'S OFFICE

May 2, 1905

SUPPLEMENTARY SPRING CO., City:

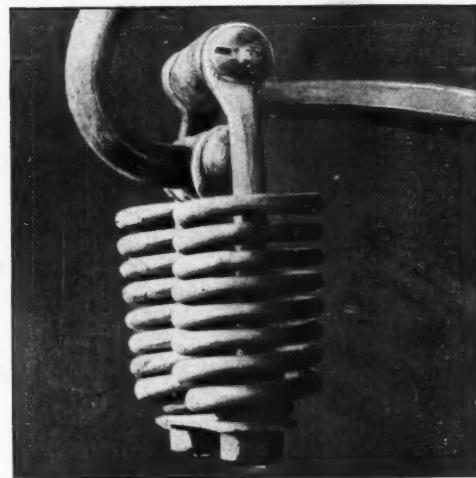
GENTLEMEN—Your Supplementary Springs are giving entire satisfaction on the automobile used by myself in responding to fire calls.

The most noticeable effect is that they permit my car to maintain its speed over car crossings and granite block streets, with full comfort to the occupants.

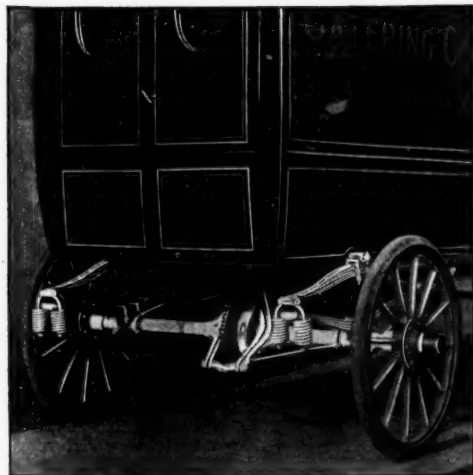
Yours truly,

(Signed)

C. E. SWINGLEY,
Chief Fire Department.



Supplementary Springs on Semi-Elliptics



Supplementary Springs on Full Elliptics

AND THEN

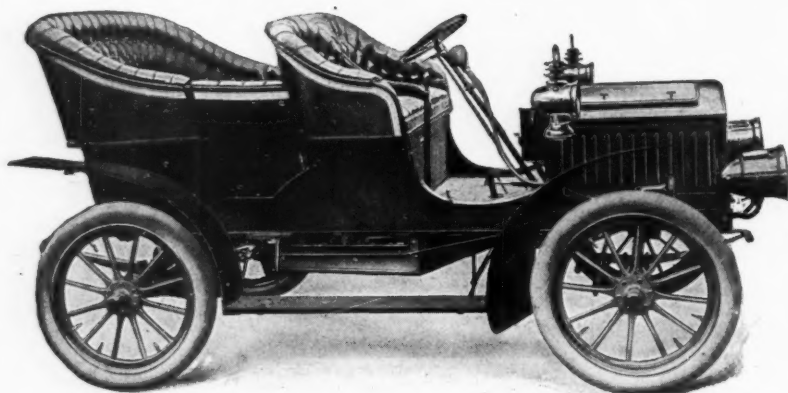
INSIST UPON SUPPLEMENTARY SPIRAL SPRINGS

IF COMFORT INTERESTS YOU, YOU WON'T BE WITHOUT THEM

For particulars, pamphlets, prices and testimonials, address

**SUPPLEMENTARY SPIRAL SPRING CO., 4527 Delmar Ave.
ST. LOUIS, MO.**

TWICE AS EFFECTIVE



In the calm and critical description of the Elmore PATH-FINDER which was written by an expert and appeared recently in the Toledo Blade, this statement was made:

"The Elmore two-cycle gas engine is twice as effective as the four-cycle motor; because the

two-cycle works about half the total running time while the four-cycle works about a quarter of the running time."

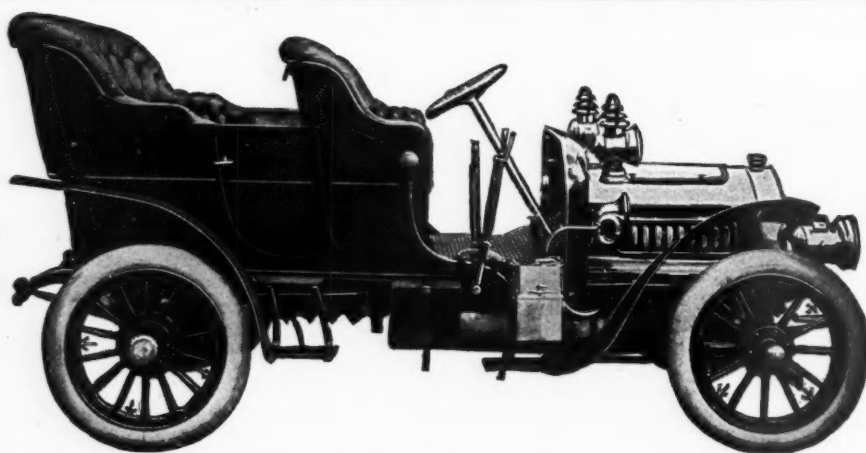
If you do not know and had never heard anything more about the Elmore Pathfinder than this, would it not be sufficient to make you investigate the car without delay?

If you do investigate, this question of constant torque alone will win your unequaled admiration and enthusiasm.

Send for full line of literature, asking for group C, the booklet illustrating the 6,000-mile trip, our 1905 catalogue and the opinions of people who have used our cars, all sent free upon request.

THE ELMORE MANUFACTURING COMPANY
 804 Amanda Street MEMBERS A. L. A. M. **CLYDE, OHIO**

The
Automobile
with a
Reputation
Behind It



"Studebaker
Quality
Throughout

STUDEBAKER

No. 9503 4 Cylinder Gasoline Touring Car

The Automobile driven and pounded over all sorts and conditions of roads is bound "to come to grief" if its bearings are imperfectly lubricated. Experience has demonstrated that the nearer the lubrication system approaches automatic action the more satisfactory will be the service. The **STUDEBAKER CAR** among its many "common sense" advantages, employs

A Direct and Positive Pressure Oiler

Simply fill the oil tank, and by means of a pump, oil is forced under pressure to all bearings, at regular intervals. The oil must "get there," as the pressure is of sufficient strength to overcome any "clogging." Sight feeds on the dash inform the autoist of the flow of oil. There are no leaky grease cups.

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Member Association Licensed Automobile Manufacturers.

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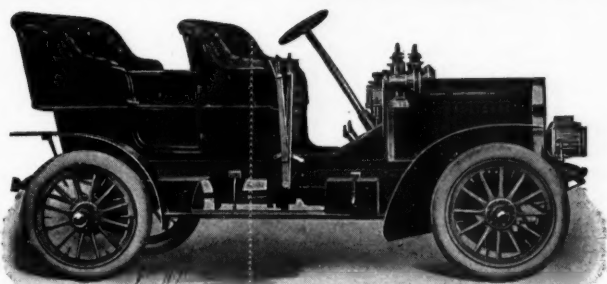
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CORBIN

CARS

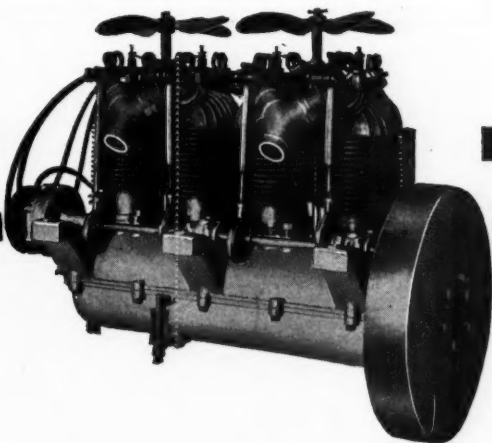
The illustration shows the Corbin Model "D" which is today superior to any car at the same price and the peer of many much more costly cars. :: :: ::



Four cylinders, 16-20 h. p. Air-cooled by Corbin System. Sliding gear transmission. Shaft drive. Pan construction under motor. Accessible, dependable, durable. :: :: :: :: ::

Model D - \$2,000

THE CORBIN MOTOR VEHICLE CORPORATION, New Britain, Conn.
 NEW YORK AGENCY, 4 West 38th St. BOSTON AGENCY, 163 Columbus Ave.



HIGH SPEED, 4-CYLINDER
 VERTICAL, AIR-COOLED TYPE

THE ONLY SUCCESSFUL
 COLD WEATHER MOTOR

Merkel Auto Motors

The Merkel 4-cylinder Air and Water cooled automobile engines can be installed in any standard frame. The Merkel is a Noiseless running engine, the Piston Rings and bearings are ground to exact size, the connecting rods are drop forged, the heating surface is minimized and the ignition is perfect.

One throw of the crank and the Merkel engine is in operation.

It is the only perfect auto engine manufactured and sold at a reasonable price.

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MERKEL MOTOR CO.

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MILWAUKEE, WISCONSIN

CONTINENTAL TIRES



Are Used by all

EXPERIENCED OWNERS

Don't Risk Your Life on a Poor Tire

If you have not read a copy of our 1905 book send for one today

ADDRESS DEPARTMENT M. A.

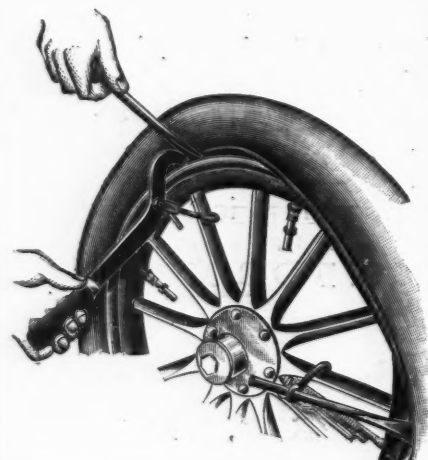
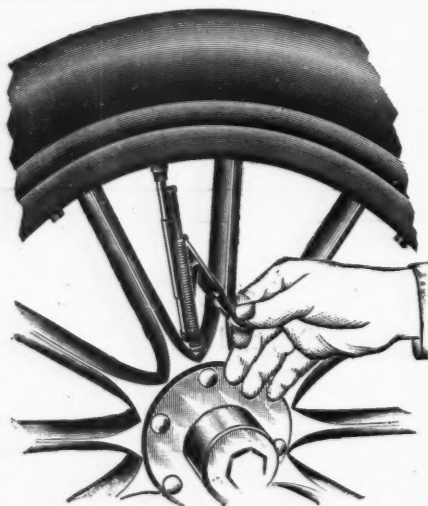
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EMIL GROSSMAN, General Manager

Factory: Hanover, Germany

298 Broadway, New York

**Samson Non-Skid Attachments on Continental
Tires now in stock. Send for prices**



"UNEEDEME"

TO OVERCOME YOUR
TIRE TROUBLES

See How Easy it is to Remove and
Replace Tires with these Tools.

It is a recognized fact that the genuine Clincher Tires have never been equalled for efficiency and safety. The only drawback was the one to three hours required with ordinary tools for removing and replacing tires. Of the hundred-and-one schemes devised, none have proved satisfactory but the

"UNEEDEME" TOOLS

SIMPLEST—SAFEST—SUREST

Simplest, because there is nothing to get out of order; Safest, because there are no sharp points or edges to cut the tire; Surest, because no matter what the size of the tire or the inexperience of the operator the same can be removed in three minutes.

THINK OF THE SAVING IN
TIME, MONEY AND TROUBLE

It increases the life of the tire—cannot cut or tear, and eliminates the 'warts' common to other processes. Once used you wouldn't be without them.

PRICES.

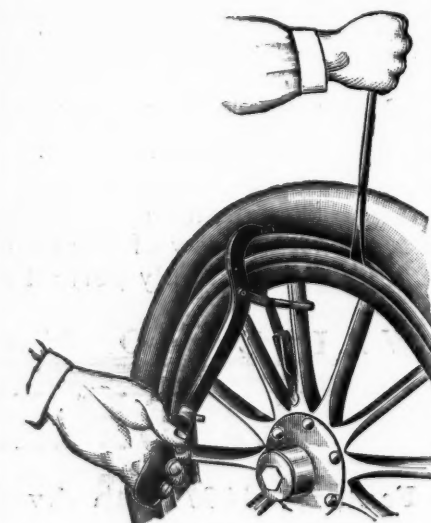
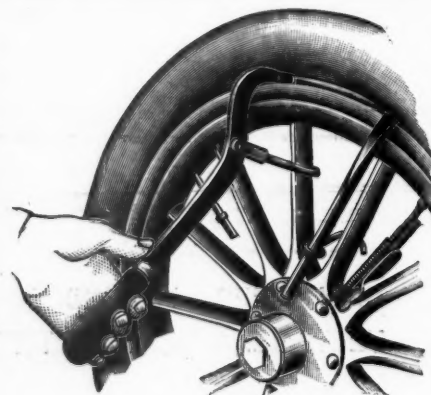
Set of Three Tools, Black Enamel.....\$3.50
" " " Nickel Plated..... 4.00
Automatic Lug Elevator, 50c extra.

Write for Booklet.

Special Inducement to Dealers.

"Unneedme" Tool Co.

COLUMBUS, OHIO.



Peerless Won by Four Hours

The fact that a regular 24 h. p. Peerless car broke the 1,000-mile record by going the distance in 25 hrs. 50 min. 1 sec. without stopping the motor, is pretty convincing evidence to any sane man of the speed and endurance of the Peerless Car.

Especially since the Peerless record is over four hours better than that of any other car.



Waiting for pistol shot at start of 1,000 miles.

Another Proof of Peerless Reliability

If you want to know more about Peerless Cars send for catalogue and booklet of Peerless Achievements.

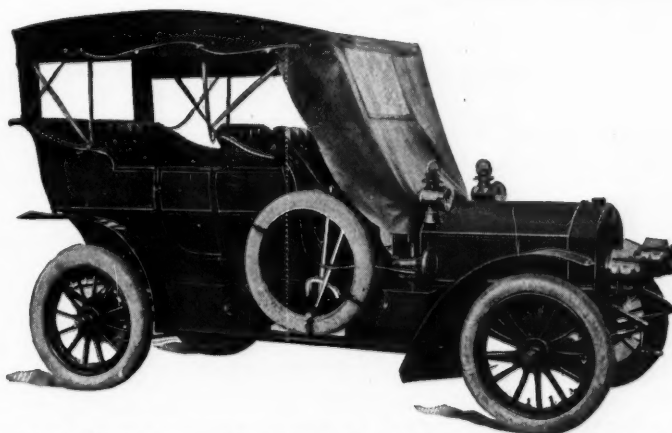
THE PEERLESS MOTOR CAR COMPANY, :: Cleveland, Ohio

Member A. L. A. M.

APPERSON

30, 40, 50 Horsepower Cars, carrying five or seven passengers.

**Open Bodies
Limousines
Full Cape Tops
Victoria Tops**



40-H. P. with Top Up and Front Curtain, and Showing Tire on Side of Car

We build a few good cars for those who want the Best.

Special cars built for those who want them

WRITE FOR OUR LARGE 1905 CATALOGUE

**Apperson Bros. Automobile Co.
Kokomo, Indiana**

BRANCHES:

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Members Association Licensed Automobile Manufacturers

Classification Distinctive... WHY?

The Lightest, the Strongest, Most Durable, Most Efficient, Best Finished. Attractive in Rich Finish and Design, Simply Manipulated.



Absolutely Safe, Perfectly Clean, Best to Ride, Most Economical to Keep. Always Satisfactory. A Carriage Any Lady Can Drive.

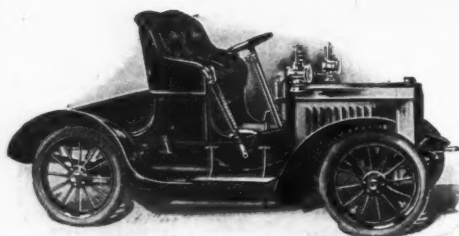
THE BAKER ELECTRIC

SEND FOR OUR BK CATALOG

THE BAKER MOTOR VEHICLE CO. Cleveland, Ohio

Chicago Agents: PARDEE-ULLMANN CO., 1400 Michigan Avenue, Chicago

Compound Motor ...Cars



Model 4½, 12-15 H. P., \$1200
Fitted with Detachable Side Entrance
Tonneau, \$1400

THE "QUALITY" RUNABOUT RELIABLE AND ECONOMICAL

Compare our Runabout with other cars selling at the same or a higher price, and you will find that our workmanship, finish and upholstery are unsurpassed. Simple and runs with scarcely any vibration, as our Compound motor is one of the most perfectly balanced motors on the market at present.

Sliding gear transmission, three speeds forward and reverse, and you can start on second speed without any perceptible jerk, in fact, as easily and quietly as with an automobile that uses steam for its motive power.

Another important feature of our Runabout is that there is no odor from the exhaust, as the exploded gases are confined twice as long as in the ordinary type of motor, thus insuring perfect combustion.

The body, fenders and hood are of aluminum, and the frame of pressed steel.

Every part, no matter how small, is numbered, and this, taken together with the fact that the Compound Runabout is "built right," "runs right," and, best of all, "stays right," makes it the true "Quality" Runabout of the present season.

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Milwaukee:
Geo. Poppert,
417 Poplar St.

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264 Columbus Ave.

Brooklyn:
Parkside Auto Station,
172 Parkside Ave.

Bristol, R. I.
John B. Herreshoff.

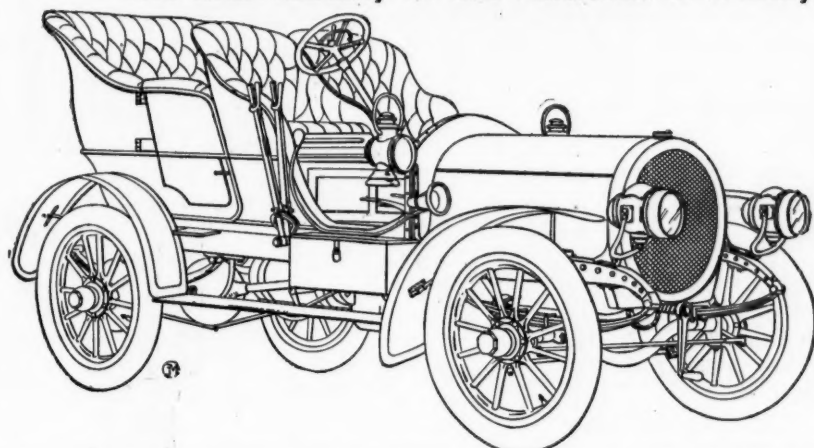
Syracuse:
Compound Auto Co.,
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Lockport, N. Y.
B. R. Thevor,
165 Pine St.

Hartford:
Automobile Exchange,
1100 Main St.

NATIONAL MOTOR CARS ***"Watch for the Round Radiator"***

The individuality of the National is a daily advertisement for dealers



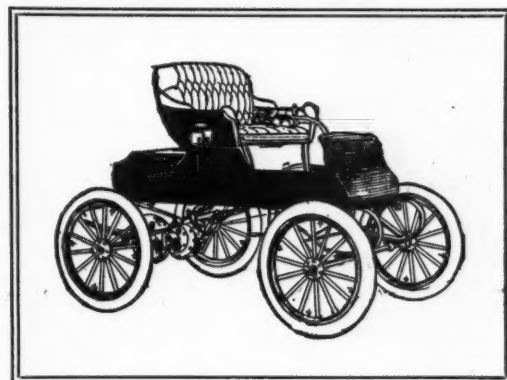
National Model C, Price \$2,500. 4 Cylinders, Vertical, 4 1/4 x 5, 24-30 h. p.

"THE WONDERFUL HILL CLIMBER"

Quiet, easy running, simply controlled. All parts readily accessible. More features of real merit than any other touring car at any price.

Our catalogue is interesting.

Write now.



National Electric Model 50.

EVERY DEALER has certain prospective customers who are prepared to buy National electric vehicles if properly approached on the subject.

Let us familiarize you with these serviceable little Runabouts and Stanhopes.

Our Catalogue is instructive.

NATIONAL MOTOR VEHICLE CO.

Member American Motor Car Manufacturers' Association, Chicago.

1006 East Twenty-second Street

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New York: Homan & Shulz Co., Broadway and Thirty-eighth St.

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Chicago: Hayden Automobile Co., 1337 Michigan Ave.

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Cincinnati, O.: S. A. Hooker, 216 E. Third St.

Providence, R. I.: Providence Motor Vehicle Co., 484 Broad St.

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PENNSYLVANIA CLINCHER

Everything has its place, but the road is not the place to repair tires.

If you use good judgment you will not need to employ the road for such purposes.

The time to use good judgment is before you buy the tire.

PENNSYLVANIA RUBBER CO.

JEANNETTE, PA.

"HOW FAST AM I TRAVELING?"



AUTO METER—EXTERIOR VIEW.

Built like a chronometer, and as indispensable as one. Magnetic force is its motive power, and as it works independently of weights, liquids or air, it is not subject to the law of centrifugal force. Absolutely even scale. No pivots nor joints to wear out and impair accuracy.

¶ The everlasting question in the motorist's mind is the one regarding "speed."

¶ Without accurate means of registering speed, no man can well approximate the rate at which he is traveling in an automobile.

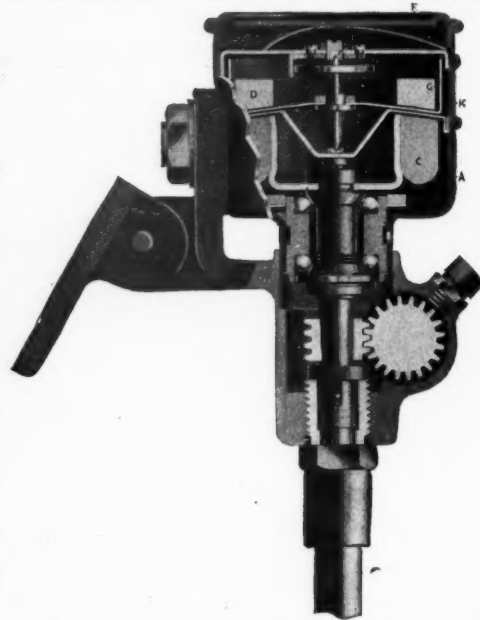
THE AUTO-METER

Answers the questions and does it so precisely that whether the speed is one mile or 100 miles per hour, the rate is plainly and steadily shown upon the indicator.

¶ Because of the proven positiveness of its principle of operation, it

CAN'T GO WRONG

¶ Send for Proof from thousands of users whose praise of the Warner Auto-Meter must convince you of its sterling value.



AUTO-METER—INTERIOR VIEW

Internal parts are gold plated. This is not done to please the eye—for the user never sees the inside—but to add to the durability. It is a contribution to cleanliness, and a preventive of corrosion.

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WARNER INSTRUMENT CO.
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SOLID SATISFACTION

in owning a

Premier Portable Garage



Unique and Attractive
in Outline.
Solid and Roomy.
Reasonable in Price.
Prompt Shipments.

(Ample in size to turn the largest touring car)

HOLLIS, PARK & POLLARD

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Also manufacturers of camps, cottages,
play houses and portable poultry houses

Firestone

Side-Wire Tires



Cost a Consideration

In buying a rubber tire for use on commercial vehicles, you expect good service from it—you may get it or may not—it largely depends upon what tire you buy.

In buying the "Firestone" Side-Wire Tires, you pay for satisfaction and get it, because they last longer than other tires—hence they're profitable.

Then why not "Firestone"?

Attractive literature on request

Firestone Tire & Rubber Co.

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MODERN CARS AT MODERATE PRICES

Simple Construction,
Accessibility of Parts,
Freedom from Complication,
Efficiency and Durability

CHARACTERIZE
EACH MODEL

POPE-HARTFORDS

Model B, improved—Special bargains for immediate delivery

Model D, 18 H. P., \$1600

POPE-TRIBUNES

6 and 12 H. P., \$500 and \$900

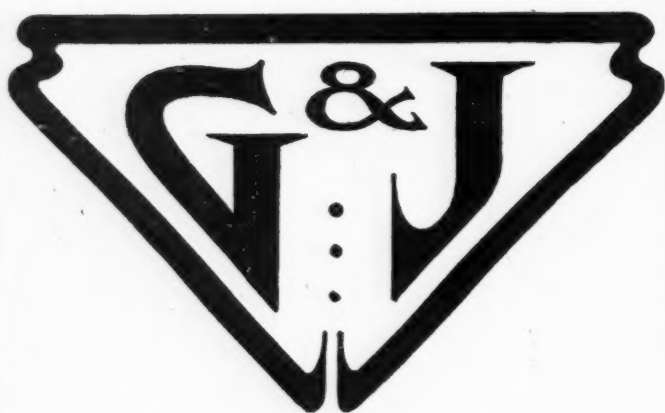
Let us send you complete catalogues giving details and convincing data.

Be sure the name "Pope" is on your Automobile.

ADDRESS DEPT. A

**POPE MANUFACTURING CO.
HARTFORD, CONN.**

M. A. L. A. M.



Motor Car Tires

THE KIND THAT GIVE NO TROUBLE

HANCOCK & BIRRS
Attorneys at Law

H. P. HANCOCK, West Union, Iowa
ALEXANDER BIRRS, Fayette, Iowa

West Union, Iowa, April 28, 1905.

G & J Tire Co.

Indianapolis, Ind.

Gentlemen:—

Last summer I purchased a car equipped with your new thread fabric tires, and while I have run the car hundreds of miles, as yet I have never even had a tire off, nor even had to inflate a tire, except to inflate this spring after deflating for winter storage. They now seem to be as good as new. The corrugations are as distinct as when bought. I expect they will run me this season and another. They are the best tires I have ever had.

Yours truly,

H. P. HANCOCK.

And the EASIEST Tires to Handle
NO CLAMPS USED WITH G & J TIRES

Get our Thread Fabric Book

G & J TIRE CO.
Indianapolis

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429 Wabash Avenue
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BOSTON
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337 Huron Street



Rims branded in the channel with these copyrighted marks have been inspected and pronounced perfect. We guarantee our tires on all rims so branded.



To those who have been worn out by the physical torture of using crow-bars, pick-axes and "surprising language" in the strenuous endeavor to manipulate other types of tires, the mechanically fastened tire method most strongly appeals. Trouble, labor and vexatious delays are reduced to a minimum.

Do not, however, allow the strong points of simplicity of operation to overshadow the questions of safety, riding comfort and economy.

Fisk Mechanically Fastened Tires

are the only auto tires made that embody
the three essential tire qualifications

POSITIVE
LOCKING
DEVICE

Incorporating a life preserving principle which makes it impossible for the tire to fly off the rim whether it be inflated or not.

AIR ALL
ABOVE RIM

Giving you the advantage of all the air where it is most needed as a cushion. Air is essential to comfort.

FIRST QUALITY AND CONSTRUCTION Built so that you can rely on them for hard service and so they will last.

You Can Have Them for the Asking.
See That They Are on Your Car.

The Fisk Rubber Co.
CHICOPEE FALLS, MASS.

BRANCHES:

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Atlanta,	103 N. Pryor St.	Denver,	1533 Glenarm St.
Syracuse,	423 So. Clinton St.	San Francisco,	114 Second St.
Buffalo,	893 Main St.	Los Angeles,	1084 So. Main St.
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Cost of Maintaining a Cadillac

We have a Cadillac dealer who has sold Cadillacs as long as we have. He offers every buyer a chance to sign a contract to let him keep the Cadillac motor in repair for one year at 50 cents per week. Out of over fifty Cadillac owners in his county he has but one (a man who last year drove a well known two cylinder car) who accepted the offer.

Here's his offer clipped from one of his advertisements:—

"I will guarantee to keep any Cadillac automobile, purchased of me, in perfect running order for one year, barring accidents, tire punctures and evident misuse, for 50 cents a week. At the expiration of one year if you are not perfectly satisfied with your Cadillac and the treatment you have received I will extend the guarantee one year longer.

"You have doubtless heard tales of the cost of keeping an automobile in repair and in running order, which, if you believe them, would cause you to hesitate and ponder a long time before purchasing a machine. As concerns THE CADILLAC AUTOMOBILE such stories are ridiculous. I will guarantee to keep your auto, if it's a CADILLAC, in repair and running order for a year's time for only 50 cents a week excepting, of course, tire punctures and damages resulting from misuse and accidents. Such a fee is nominal. It indicates most clearly the splendid mechanism of the Cadillac, its smooth running and easy operation. My offer that should you, at the expiration of one year, feel other than perfectly satisfied with your Cadillac and the treatment you have received I shall extend the guarantee for another year, tells you of my perfect confidence in the performance of the Cadillac and the merit of its construction."

MR. DEALER:—

If you are not satisfied with the automobile you are handling ask Cadillac dealers and Cadillac owners what they think about the single cylinder Cadillac. It may pay you. Now is the time to begin correspondence for agency.

Cadillac Automobile Company,
Member Association Licensed Automobile Manufacturers.
DETROIT, MICH.

THE INCOMPARABLE WHITE THE CAR FOR SERVICE



"Touring From Savannah to Buffalo"

is the title of one of the articles in White bulletin No. 9 which is now ready for distribution. The article is contributed by John S. Rowe, who made this memorable 2500-mile trip, accompanied only by his wife, his two young sons and their governess.

Mr. Rowe drove his White car over roads which were declared by the natives to be absolutely impassable at the time of year when the trip was made, namely, in March. Mr. Rowe's narrative of how he triumphed over great natural obstacles, and his comments on the sections of the country which he traversed should be of interest to all automobilists. A fine map of the route is included.

Write today for this Bulletin

WHITE Sewing Machine **COMPANY**
Cleveland, Ohio.

This is IT



The Indestructible
FAWKES
 AIRLESS
 TIRE

NEEDS NO PUMPING
 PUNCTURES CANNOT
 INJURE IT AND

You may return same after 30 days' use, and *get your money back* if *every claim* for its superiority is not fulfilled. Write for book of *genuine testimonials*.

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Special IGNITION Batteries

100 Amp. Hours
200 Amp. Hours
360 Amp. Hours
600 Amp. Hours

OUR RECORD

as Exclusive Purveyors:

800,000 Sets

in actual use by the
 French, German and
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Our Record is Your Guarantee

WRITE US.

The "Pile-Bloc" Company

AMERICAN BRANCH

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253 Broadway, N. Y. CITY

STANDARD PARTS FOR POWER TRUCKS AND WAGONS

The marked economy of power wagons for delivery, express and truck service, and their superior reliability when in reasonably intelligent hands, is so well established that those who are conversant with the facts cannot fail to see that power wagons are rapidly beginning to supersede horse service.

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STEERING GEAR, Complete	CHAINS	COUNTERSHAFT and REDUCTION GEARS
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HUB BRAKES	DISTANCE RODS	MOTOR HANGERS
ELECTRIC MOTORS	CONTROLLERS and Accompanying Details	

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TOURING CAR PARTS, CATALOGS Nos. 6, 7, 8 and 9

The Garford Company, Elyria, Ohio.

Selling Agent: HAYDEN EAMES, American Trust Bldg., Cleveland

"The Eagle"

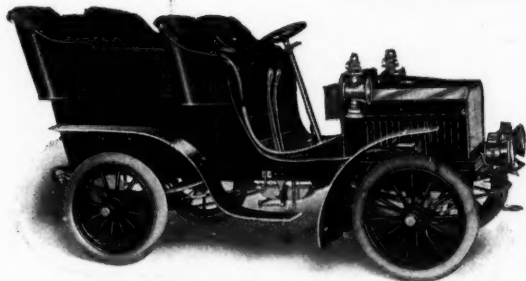
TWO MODELS

Model A.

12 Horsepower
Double opposed engine
Price, \$950

Model B.

4-Cylinder, air-cooled
24 Horsepower
Long wheel base
Price, \$2250



Big Discount

Agents Wanted

Immediate Deliveries

The Eagle Auto Co.

479-483 Pearl Street
BUFFALO, NEW YORK

THE MOLINE



12 H. P.

Model "D"

\$1000

Double Cylinder Opposed Motor. [4½-in. x 4½-in.]
Roller Chain Drive.
86-inch wheel base. 30-inch wheels. 3½-inch tires, rear; 3-inch front.

Detachable tonneau with comfortable side entrance.

Model "B" is our 4 cylinder, 18-20 H. P. Touring Car with shaft drive, 105-inch wheel base, luxurious side entrance tonneau, which sells for **\$1600**

MOLINE AUTOMOBILE COMPANY

Member American Motor Car Manufacturers' Association, Chicago.

EAST MOLINE, ILLINOIS

AGENTS.

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Matthewson Automobile Co., Denver, Colo.
Wm. Gregory, Los Angeles, Cal.
Buck Auto. Co., Davenport, Iowa.
Northern Automobile Company, St. Louis, Mo.

WHEN YOU SELECT A CAR

LOOK WELL

to These Features in
the order named

- | | |
|---------------|----------|
| 1 RELIABILITY | 3 SAFETY |
| 2 COMFORT | 4 SPEED |
| 5 PRICE | |

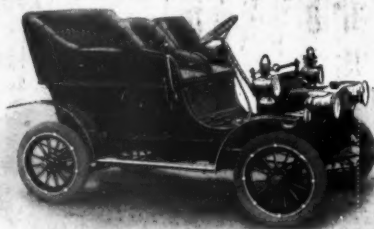
THE GLIDE

MEETS EVERY
REQUIREMENT

OUR CATALOG DEFINES EACH FEATURE AS APPLIED TO AUTOMOBILES

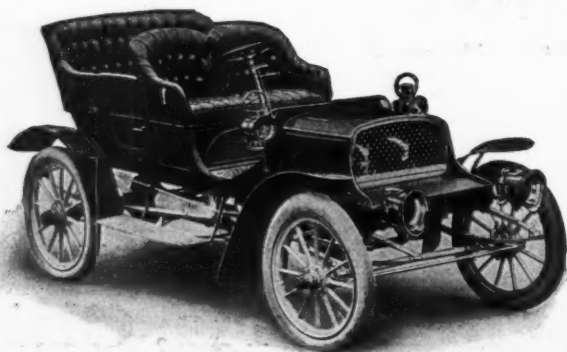
THE BARTHOLOMEW COMPANY
PEORIA, ILLINOIS

WRITE FOR THAT CATALOG; IT CONTAINS GOOD COMMON SENSE READING



GLIDE—STYLE D

(Two-Cylinder Opposed Motor)



MOST cars require a *lot* of water to keep them cool; Premiers are cooled by air—the logical way—hence do not *need* the cumbersome paraphernalia which the others do—saving weight, time, repairs, cost. "Premier Quality" has become a sort of high standard by which to judge others, and we are having imitators—and flatterers. Buy a Premier and you buy satisfaction.

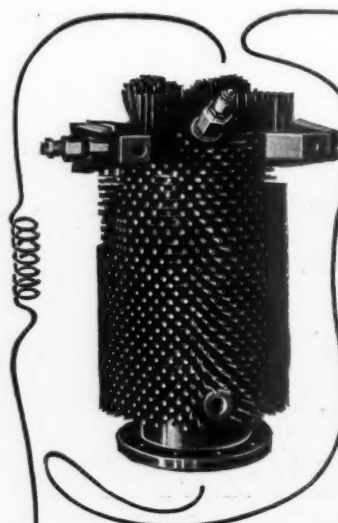
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BOOKLET OF TESTIMONIALS

PREMIER MOTOR MFG. CO.

Member American Motor Car Manufacturers' Association

1001 Georgia St.

Indianapolis, Ind.



THIS IS ...
WHAT MAKES
KNOX
CARS GO

Every car has two high power cylinders equipped with the famous Patented Knox Pin System of air-cooling, which is absolutely unlike and 50 per cent better than any other. The corrugated pins surrounding each cylinder present to the fans a heat-radiating surface of 32 square inches for every square inch of outside surface of the cylinder, while the fans run at a speed varying automatically with that of the engines.

Knox Cars, cooled by the only perfect system, run satisfactorily

ALL THE YEAR ROUND

Correct mechanical construction is as necessary for a Touring Car as a Motor Truck. The simplicity, durability and lightness of the Waterless Knox Cars commend them in every case. They are always

RELIABLE ECONOMICAL POWERFUL

Send for our catalog showing 6 styles of Passenger and 6 styles of Commercial Cars.

Agencies in all the principal cities.

KNOX AUTOMOBILE CO., Springfield, Mass.

Member Association Licensed Automobile Manufacturers.

The "Lea" a Perfect Tire Pump



WE WANT LIVE AGENTS.

Good territory and exclusive rights
to proper parties. **Write now.**

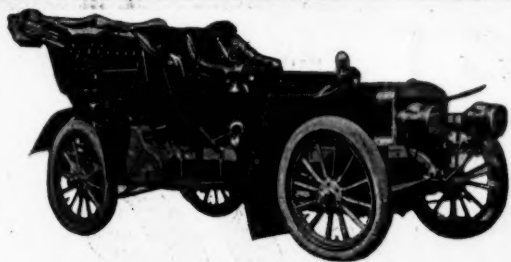
Built on established engineering lines...Gives higher pressure in less time with one-tenth the effort required by other pumps....Is always ready....Fitted with pressure gauge insuring even inflation.

Write for booklet and agency proposition to

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Sole Selling Agent

For Motor Car Specialty Co. of Trenton
114 North Broad Street
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PROVE IT YOURSELF

The quickest way in the world to prove the quality of an automobile is to PROVE IT YOURSELF. Ride in it. Run it yourself.

Watch critically each detail under a practical, working test—under every circumstance and condition, favorable and unfavorable. Such a test is PROOF POSITIVE.

Acme Motor Cars

Sell on Demonstration. Most simple operation and control—Greatest power in proportion to weight—Elegant appointment and design—Highest degree of workmanship—Correct engineering practice throughout. **Demonstration in TEN CITIES.**

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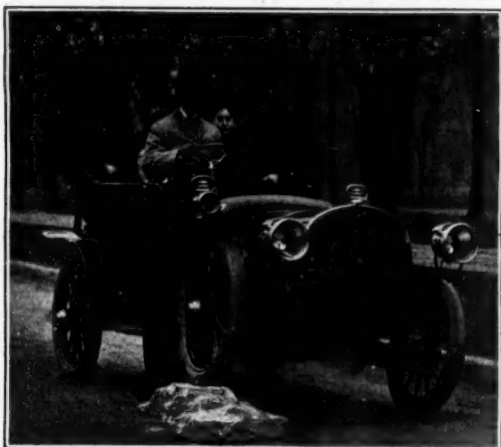
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"A Mechanical Masterpiece"



SEE THAT ROCK?

It's over a foot high. Notice the wheel resting on it, axle aslant, springs not compressed, yet the body from side to side is LEVEL. This wonderful flexibility provides a luxury of motion that is absolutely unrivaled—even over the roughest roads. This and other advantages are due to our exclusive, PATENTED

DOUBLE THREE-POINT SUSPENSION

Cast aluminum body on one frame, simple accessible oil-tight mechanism on another frame, EACH suspended on three PIVOTAL points. Eliminates the binding and twisting strains INEVITABLE in the customary rigid four point suspension; hence, means fewer parts, greater efficiency and less wear on tires and all working parts. Rigid shaft drive, without Cardan joints; quiet, unique air-cooled motor; positive automatic force lubrication that absolutely marks the end of all troubles. Booklet No. 1 describes it.

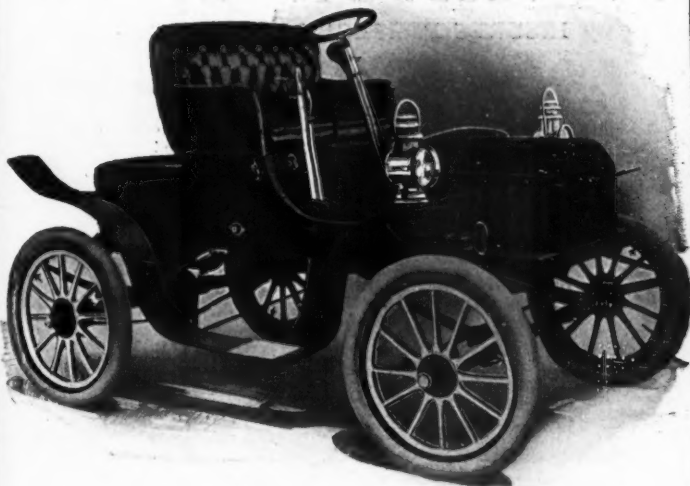
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Established 1851.

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The SANDUSKY AUTOMOBILE CO.Courier



STYLE F. \$650.

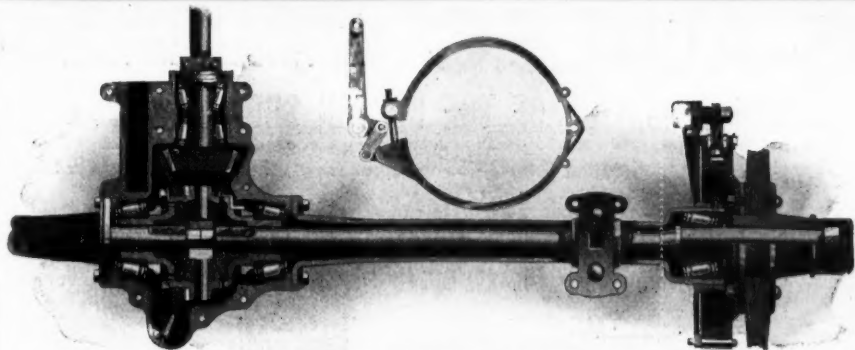
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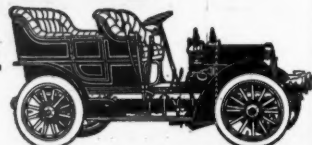
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FOR OUR ROADS, IS BETTER
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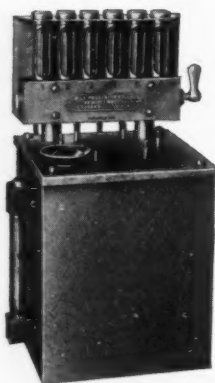
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THE HILL PRECISION OILER

INSURES PERFECT LUBRICATION

Your Money Back if it
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It measures the oil, and uniformly forces exact quantities to each bearing it serves, regardless of the resistance, or of the varying resistance, in the different tubes. It feeds only when the machinery is in motion.

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ARE STRONGER
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Insist upon having your new cars equipped with them.

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WE MAKE
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"MARKS A NEW ERA IN
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THE SENSATION OF THE BOSTON SHOW A 40-45 H. P. 4-cyl-
five-passenger, side entrance, Gasolene Touring Car of the Highest Grade inder, 4-cycle engine,
WITHOUT Starting Crank, Change Speed Gears, Clutch, Cams, Rocker Shafts, Tappets, Valve Gearing or complications.

Every movement of the motive power and the car, from a state of absolute rest, forward at any speed or reverse is controlled by one lever, operated either by hand or foot as preferred. Positively no other speed or movement controlling device of any kind on the car. Triple brakes—irreversible steering gear.

THE GAS-AU-LEC IS THE SIMPLEST
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NOT AN EXPERIMENT, BUT A SUCCESS.
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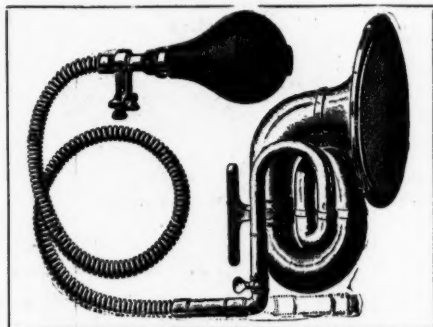
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The Care of the Car

Washing the body of the machine, keeping the polished surface free from lubricator, road dust and gutter muck is just as essential to the life of an Automobile, as is the attention given the running gear.

Mobo, the new cleanser for Automobiles, will easily and quickly remove grease, dirt and grime and all traces of a hard run, without dulling or scratching the highly polished surface.

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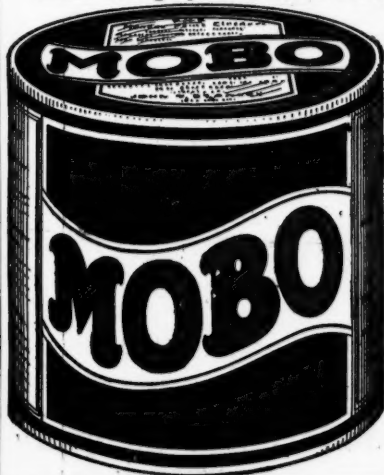
is unlike common soap, as it positively contains no free alkali. Being a preservative as well as a cleanser, it prevents

varnish or paint from peeling or cracking, and adds a fine gloss to the surface.

Mobo may be used with profit on leather goods, harness or woolen fabrics. Cannot harm the most sensitive skin, as it is a purely vegetable oil preparation and absolutely contains no free alkali. Put up in 2-lb. and 8-lb. cans; also in tubs, half barrels and barrels.

If your supply man does not keep *Mobo*, send us his name and address, and we will see your wants are supplied.

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AMERICAN CROWN

SOAP

Is a green soap, consistency of paste, a perfect cleanser for automobile machinery and all vehicles; will not injure the most highly polished surface. Made from pure vegetable oils. If your dealer does not carry AMERICAN CROWN SOAP in stock, send us his name and address and we will see that your wants are supplied.

Put up in 12 1-2, 25 and 50 lb. Pails

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Horizontal Opposed Cylinder Engine, 4x4.

HAVE PROVEN THEIR
VALUE in ACTUAL SERVICE
BECAUSE THEY ARE
SKILFULLY MADE AND
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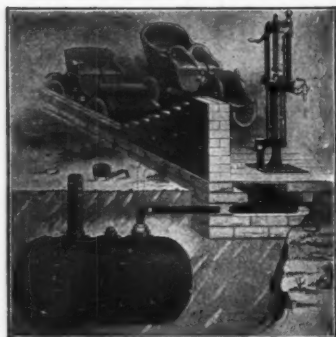
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Durability and Neatness of Design,
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The Bowser Long Distance Gasolene Storage System—Tank Buried—Pump in Building.

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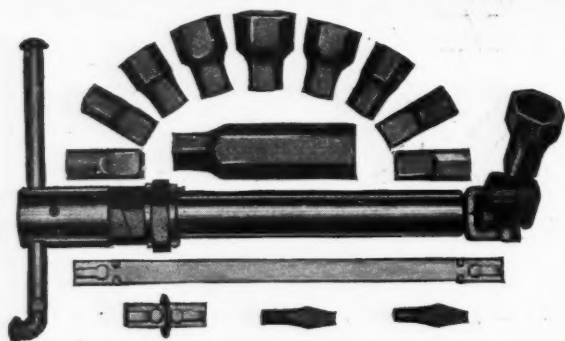
We manufacture Gasolene Storage Outfits—all kinds. Self-measuring Outfits for Garages; smaller, less expensive ones for private automobilists. If you use any quantity of gasolene—no matter how small—you will find in our catalog a tank exactly suited to your purpose. We shall be glad to mail you our catalog. It was prepared for YOU. Your request carries with it no obligation. It simply indicates your willingness to investigate the most complete line of tanks ever offered gasolene users. Ask for Catalogue XV.

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Bowser "Little Giant" Gasolene Outfit

THE AUTO CLE



The Auto Cle Wrench comprises all the above parts. These sockets fit any nut or bolt on any machine.

The swivel joint works at an angle enabling the easy reaching of the most inaccessible part of the machine.

The Auto Cle has a ratchet movement in either direction, right or left hand.

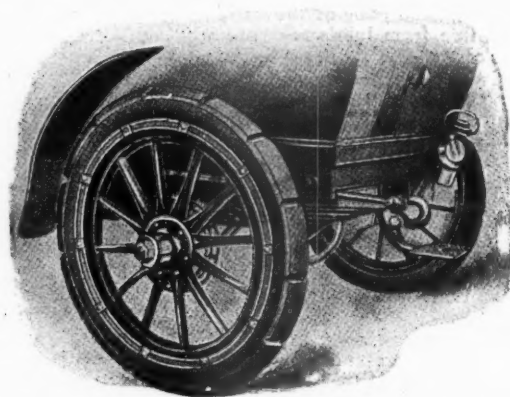
Saves its cost in a short time.

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Is made of Anhydrous Leather, the only Leather on the market which resists Water and Oil, and the only Leather suitable for facing Clutches, Brakes, and for Mud Guards and Repair Sleeves for Tires. ∴ ∴ ∴ ∴

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*It is just what you
Have been looking for*

Quickly attached and detached.
Creeping and Rim Cutting entirely avoided.
Made of the very best material and workmanship throughout.
Write us for full particulars.

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Here's Proof

From the
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... After expending about \$150
for various makes of carbureters and
finding them all defective because
of lack of range in throttling the
engine, we were much pleased upon
installing your Acorn carbureter.

We find this carbureter feeding
the engine evenly and properly from
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WE DO NOT HESITATE TO RECOMMEND
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IT FED OUR ENGINE PROPERLY IN
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that proves their Sterling Reliability. A trial will convince anybody. Write

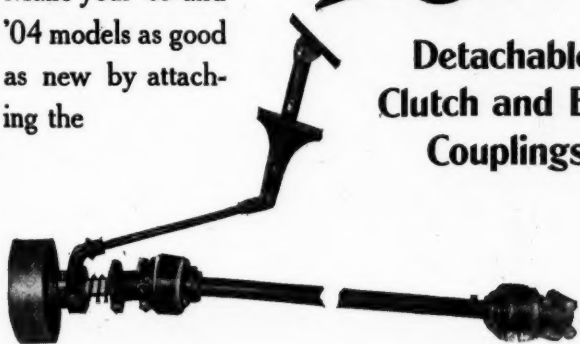
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**Detachable
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We furnish everything that you see in the cut. Tune
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Think of it, a pair of Coates Couplings and a Detach-
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Send us your couplings, brake band and shaft and we
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None Genuine Without
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Acetylene Burners

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They are Recognized Standard Burn-
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Accurate in consumption. Free
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Licensed under Patent 589342,
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We advertise not only our burners,
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Is there any reason why you should
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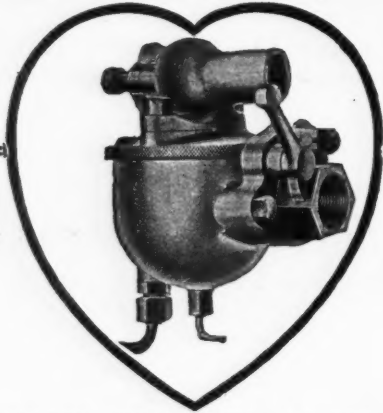


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GENERAL LICENSEES,

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THE HEART OF THE AUTOMOBILE

The Schebler Carbureter

This is the model No. 1 racing Schebler, which was attached to the automobile that broke all world's records for light and middle weight cars and defeated the big 90 h. p. foreign cars, at the Empire City track, Nov. 8th.

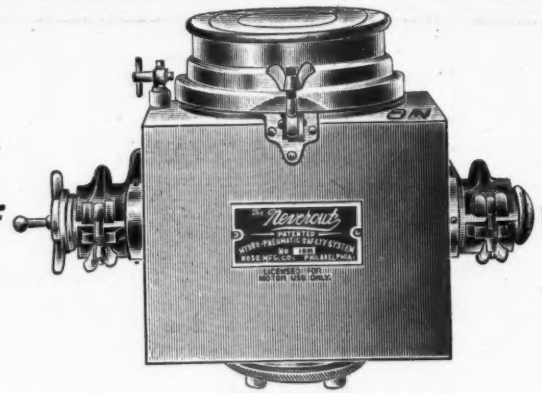
If you want to get full power and speed of your engine, besides having a carburetor that gives a perfect mixture at all engine speeds and is not affected by weather conditions, buy the **SCHEBLER**. It is high priced but it does the work.

Special connection for attaching the Schebler to Oldsmobiles, any model.
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does away with all fuss and trouble and danger of supplying gas for lighting systems of motor cars and boats.

Makes gas only as needed—no gas confined under pressure, no danger of explosion.

Instantly lighted at any time and produces an intensely white and powerful flame. Turn it off and the contact between the unused carbide and the residue is immediately broken. Just as quickly renewed at any time.

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gives you the full benefit of this powerful light. It is strong and handsome and the projecting lens is always as brilliant as when new.

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Mr. Dealer: Patronize the Jobber who protects your interest.

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Per L. H. A., Manager.

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Exporter and Importer

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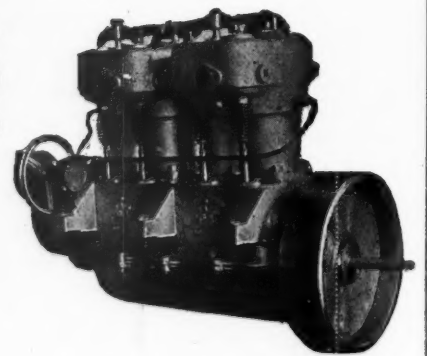
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Only *we* go further than Noah and **WAR-RANT DURQ** batteries to give the *same* output *one year from now* as they give *today*. And **DURQ**'s output today is *guaranteed*. Why don't you write?



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WE CLAIM

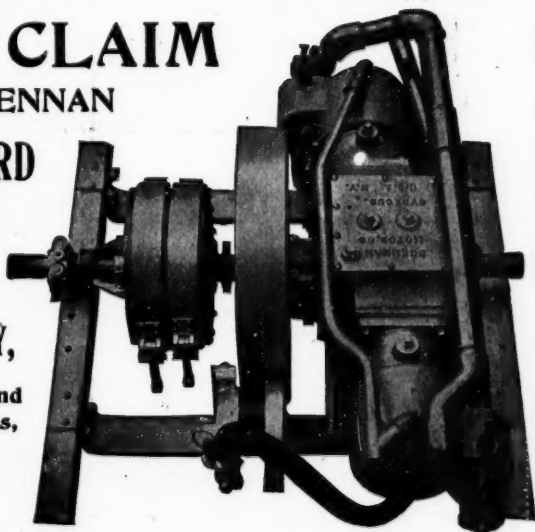
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STANDARD MOTORS

ABSOLUTE

SIMPLICITY,

substantial and large bearings, ease of adjustment and



UNUSUAL ACCESSIBILITY FOR INSPECTION

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No Motor Can Do More Than Satisfy

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INVESTIGATE THE CLAIMS

\$35.00

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We guarantee every statement we make to be absolutely correct.

Over one thousand users of the **PREST-O-LITE** gas tanks since Oct. 1, 1904. Not a single one dissatisfied.

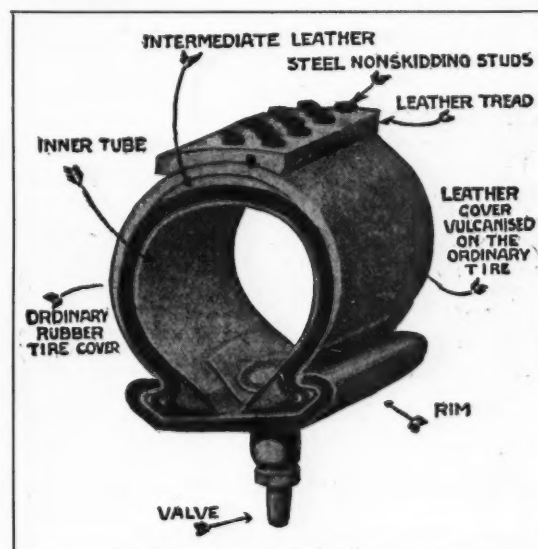
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WE wish to state that because this car is sold at so low a figure,
is no sign that it is cheap. Every part is the best that we can
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Eight H. P., horizontal single cylinder 5"x6"; weight,
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Car can be run without body, as all wires, connections, etc.,
are on the chassis.

Chicago Agents: MEAD MOTOR CO.,
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THE WESTERN TOOL WORKS, Galesburg Ill.

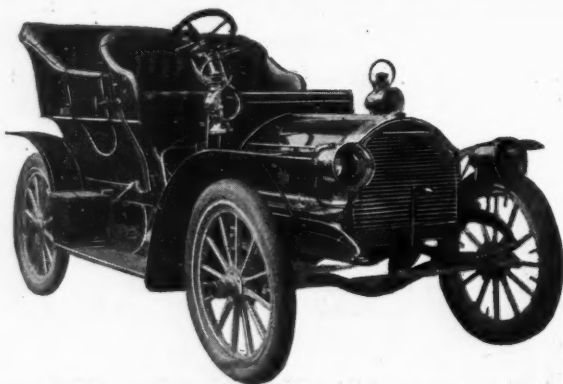
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A STODDARD-DAYTON in a territory always brings
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The fact of continued excellent performance is a direct
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perfect construction.

Certainly worthy of investigation.

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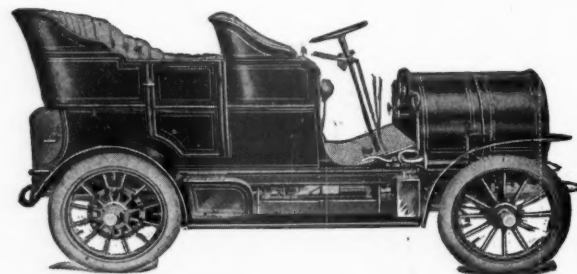
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made in 34 2-5 seconds, by Grout Steam
Car, defeating all American and For-
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This speaks for itself.

GROUT

Cars Are Winners Everywhere

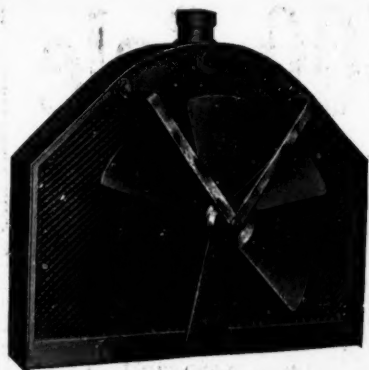
Built for speed, hill climbing and touring.
If you see it in the lead, it's a GROUT.

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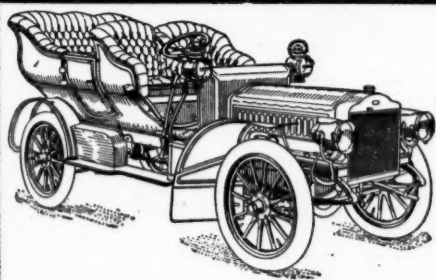
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FOR 1903-1904-1905

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IT'S THE
40 HORSE THOMAS "FLYER"
\$3,000

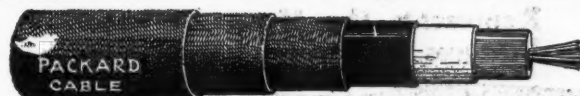
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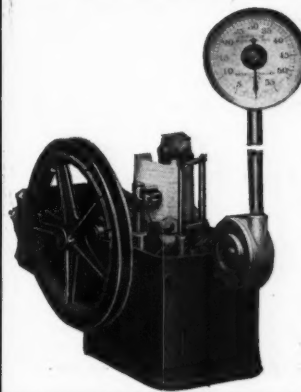


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which registers on dial, also speed, stops and mileage on tape, as well as mileage on odometer.

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are guaranteed to be equal to any on the market.

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MUD

FORGET IT AND USE WEED'S TIRE GRIPS.
POSITIVELY STOPS SLIPPING OR SKIDDING.
THEY MAKE BAD ROADS GOOD.
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Made DETACHABLE or RIVETED
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We also make Sprockets of all kinds

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Complete with Pressure Gauge



Made of highly polished brass, 6 in. long, 3 1/2 in. diam., wt. 2 1/2 lbs.

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spark-plug is actually soot-proof. Never short circuits.

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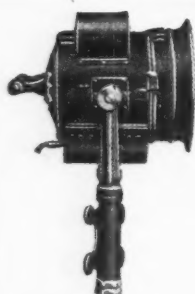
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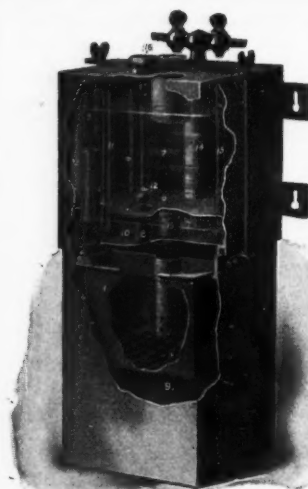
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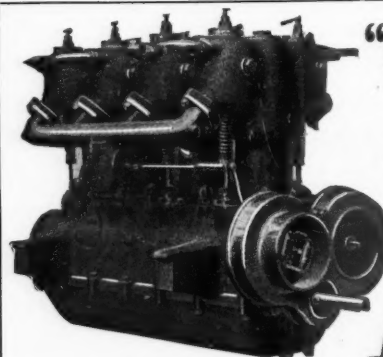
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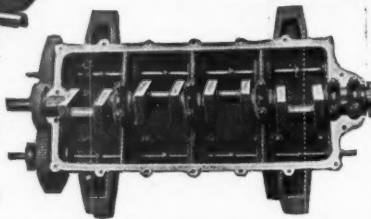
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They ACTUALLY "SPIT-FIRE"

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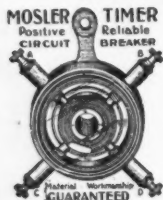
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Protects Insulation and Sparking Points.

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BREAKER
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have no trouble with weak storage batteries
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With the **Apple Automatic Sparker** you
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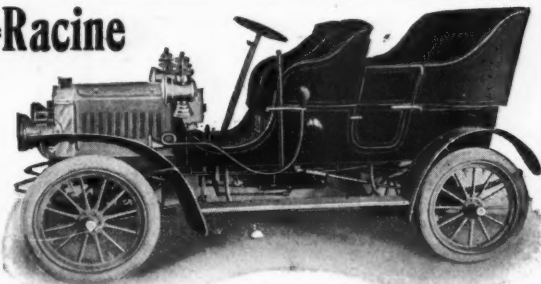
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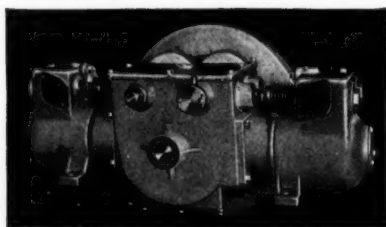
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25 to 50 per cent of your battery cost reduced, or a like increase in mileage run by the use of an entirely new device

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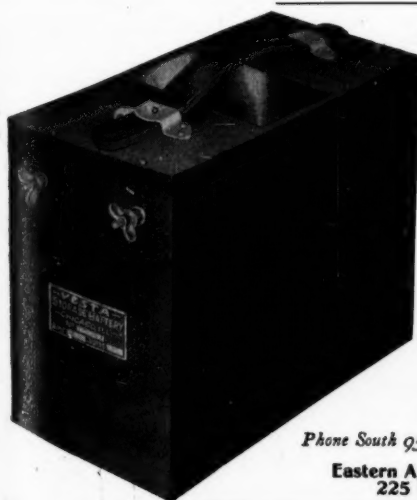
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Satisfaction Guaranteed by

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For \$10.00 you can get the Form B Veeder Odometer which goes on the left steering arm, and for \$25.00 you can get the Form D, which goes on the dash. The latter type has two registers, one of which may be set to zero at will.

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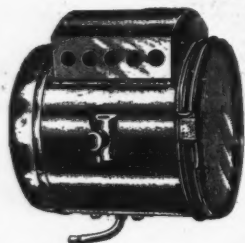
Eastern Department

HARTFORD, CONN.



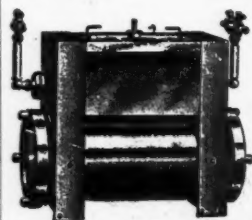
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Generator No. 3—Capacity 54 oz.



Models: A—5-in. Mirror Lens.
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 Lens. With Adjustable Burners

Will supply from one to six burners. Equipped with two Carbide Cups. One cup can be used on from one to six burners, keeping the other in reserve, or both cups can be used at the same time. When large quantities of carbide are used in the generator, considerable heat is evolved, and it is desirable to keep the generator as cool as possible.



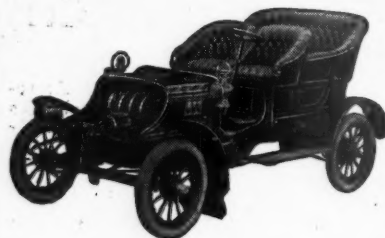
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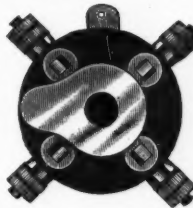
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way to obtain the best results
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you'll be making a start in the right direction, as our experience in pressed steel work enables us to make a frame as it should be made.

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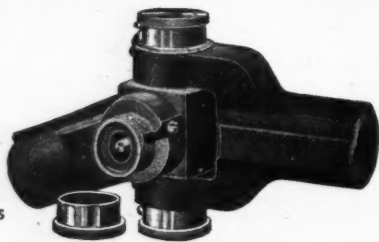
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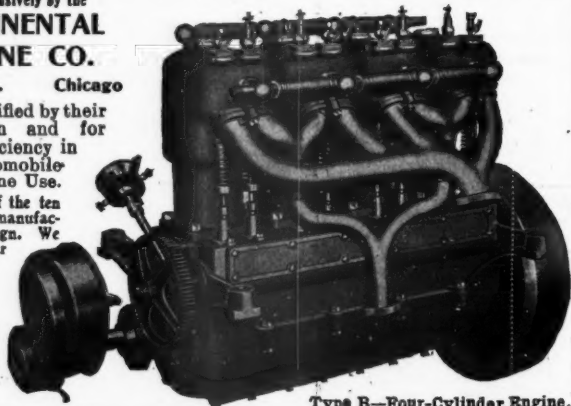
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ALL OF THESE AND MORE

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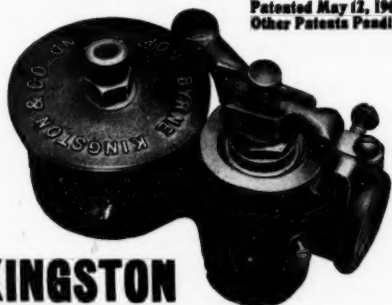
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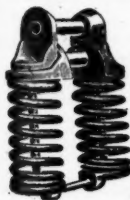
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Also tells make of machine. No duplicates.
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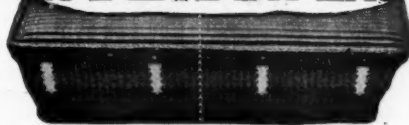
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Interesting booklet and samples FREE.
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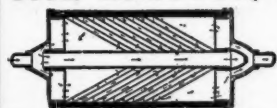


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You turn the crank, and the four wheels will raise 7 inches off the floor. Write for description and price.
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All Leading Automobile Manufacturers Use this Cushion Spring

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Placed in Feed Pipe of Your Engine
Removes all Varnish, Scale, Dirt,
and Sediment as well as Water
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SAVES HALF YOUR TROUBLE
SIMPLE, CHEAP, EFFECTIVE

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Automobile and Marine Motors
Simple, Compact and Powerful
Best Material. Perfect workmanship. Send for Catalog
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Be sure YOUR CAR
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ROYAL DELUXE SWIVEL SEARCHLIGHTS

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FIVE SIZES
5", 6", 7", 8" and 9"
diameter of front.



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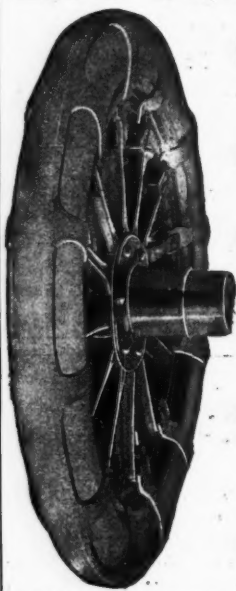
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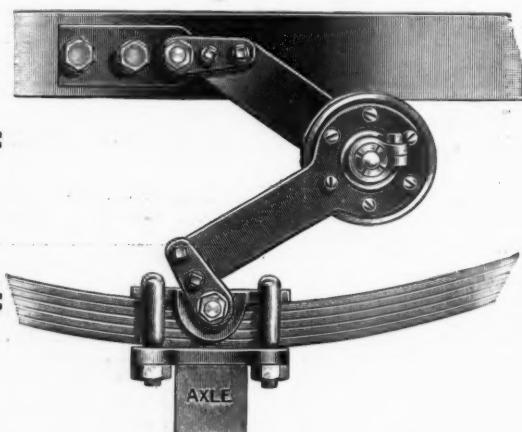


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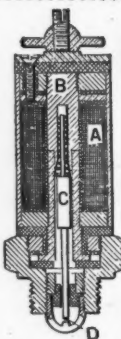
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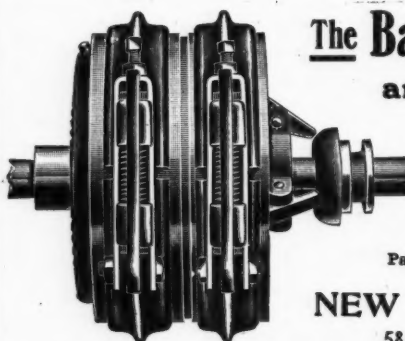
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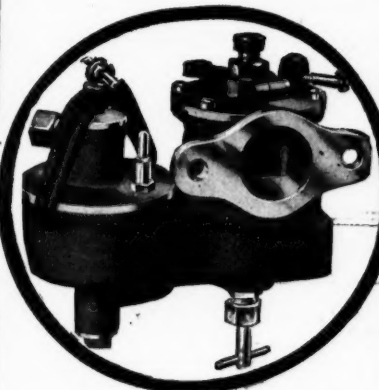
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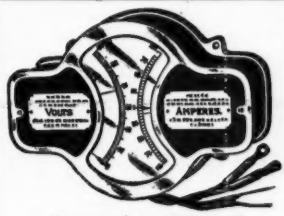
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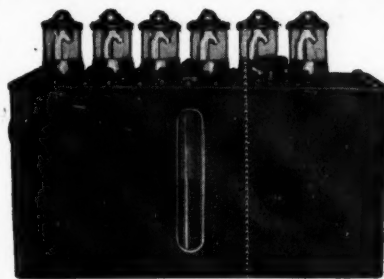
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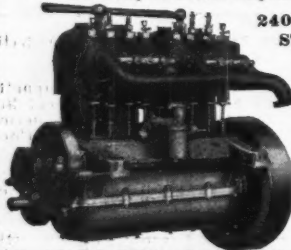
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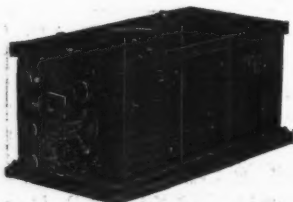
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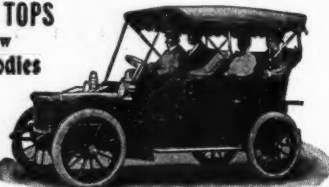
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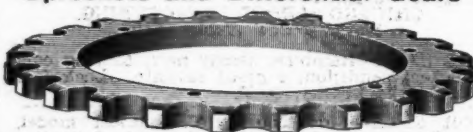
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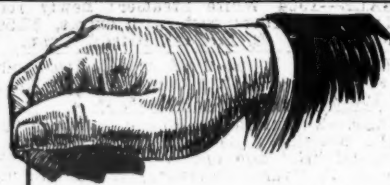
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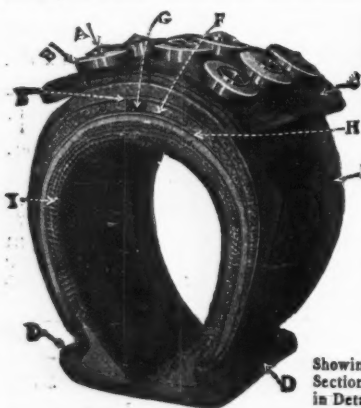
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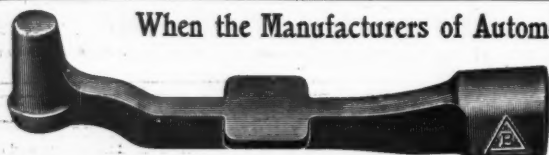


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